

CALIFORNIA'S OWN
GARDEN MAGAZINE

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AUGUST - SEPTEMBER
1969

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Summertime Blues?
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Floral events . . .

Shows in Conference Building, Balboa Park unless listed otherwise.

SANTA BARBARA BRANCH OF AMERICAN BEGONIA SOCIETY "Begonias" August 30, 31 and September 1, 10 a.m. to 5 p.m. daily. Flower Hall of Santa Barbara Museum of Natural History. Free.

AMERICAN BEGONIA SOCIETY "371b Annual Begonia Show" September 6, 1 p.m. to 6 p.m.; September 7, 10 a.m. to 6 p.m. Show will be at Los Angeles County Arboretum on Baldwin Avenue in Arcadia. Free.

SAN DIEGO FLORAL ASSOCIATION — Tuesday, September 16, Floral Building 8:00 p.m.

Night of Ikebana — Mrs. Roy K. Jones, will speak on *Symbolism and Japanese Garden Design*. Ikebana members will serve as hostesses and will provide interesting refreshments.

IKEBANA INTERNATIONAL presents Japanese Headmasters Mr. Isshin Mori II of the Enshu School and Mrs. Saigetsu Yamamoto of the Kofu School. Flower demonstrations will be presented in the Puppet Theater in Balboa Park on October 14, 1969 from 1 to 3 p.m. Donation \$2.50.

CONVAIR GARDEN CLUB — (Formerly General Dynamics Garden Club) Garden Club Show, October 25, 26, Floral Building, 2:00 p.m.-9:00 p.m., Saturday and 10:00 a.m.-6:00 p.m. on Sunday. Show will feature chrysanthemums, potted and hanging plants, roses, arrangements and corsages.

WONDERFUL WORLD OF PLANTS AND FLOWERS — 1969, sponsored by the Southern California Horticultural Institute, at the Santa Monica Civic Auditorium, 1855 Main Street, Santa Monica, on Saturday, October 25th, 12 noon-10 p.m. and Sunday, October 26th, 10 a.m.-8 p.m. Admission \$1.00 including parking.

SAN DIEGO FLORAL ASSOCIATION — Tuesday, October 21, 8:00 p.m. Mr. Enoch Rowland of a National City Soil Testing Laboratory will speak on nutrition in soil and the Analysis of soils and leaves.

SAN DIEGO FLORAL PROGRAM CHAIRMAN

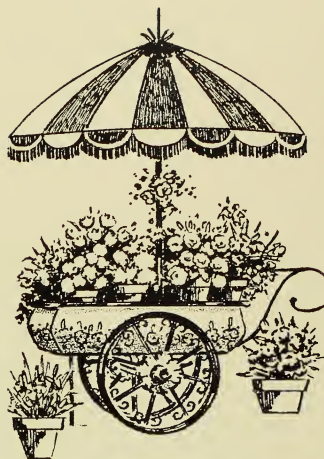
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Bus Tours

BALBOA ISLAND—Saturday, September 6, and Tuesday, September 9, Mission San Juan Capistrano, Newport Harbor, Balboa Island and Laguna Beach. \$9.50 including all admission and fares. Buses load Balboa Park 8:30; La Jolla, 9 a.m. Return about 8 p.m. Water tour at Newport Harbor, two hours' shopping at Balboa Island, and one hour at Laguna Beach.

ENSENADA SHOPPING TOUR—Thursday, October 23 and Saturday, October 25. American Buses will transport tour members to the Mexican Border where they will be met by modern Mexican buses for the route to Ensenada. There will be a stop at a glass factory in route as well as a stop at the Rosarita Beach Hotel. In Ensenada there will be the option to make a reservation at a world famous restaurant for a no-host lunch or dinner. Buses will load in La Jolla at 8:30, Balboa Park at 9:00 a.m. Buses will return about 8:00 p.m. Cost of the tour is \$8.50.

RESERVATIONS may be made by sending check or money order to the San Diego Floral Association one week before the tour. Office hours are Monday, Wednesday and Friday between 10 and 3, telephone 232-5762. Mrs. Donald A. Innis and Mrs. Walter Bunker will also give information.



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SAN DIEGO FLORAL ASSOCIATION PROGRAMS — Third Tuesday, Floral Building, Balboa Park — *Chairman, Mrs. Alvin T. Laughlin*



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CALIFORNIA GARDEN MAGAZINE
SINCE 1909

CALIFORNIA GARDEN

California's Own Garden Magazine

August - September, 1969

Vol. 60

No. 4

THE COVER

Our "summer blues" cover is another artistic contribution of Mrs. Eugene Cooper (Betty). Both Betty and Gene have been so very generous with their talents, and in making their slide collection available to us.

On our back cover, Betty Mackintosh, an artist with her camera, and our photographer, of whom we are very proud, has caught a group of morning glories in a lovely composition. Each issue of CALIFORNIA GARDEN is enhanced with Betty's beautiful flower and plant pictures.

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CALIFORNIA GARDEN

Published Bi-Monthly by the SAN DIEGO FLORAL ASSOCIATION
Floral Association Building, Balboa Park, San Diego, California 92101
232-5762

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Virgil Schade, President; Mrs. W. E. Betts, Jr.; Mrs. Eugene Cooper; Mrs. Donald A. Innis;
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9173 Overton Avenue, San Diego,
California 92123

Advertising rates on request. Copy deadline, 1st day of the month preceding date of issue. California Garden is on the list of publications authorized by the San Diego Retail Merchants Association. Entered as second-class matter, Dec. 8, 1910 at the Post Office of San Diego, California under the Act of March 3, 1879.

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*Delphinion**

by Helen Witham

THE ANCIENT GREEKS
HAD A MYTH FOR IT:

A certain fisherman one day fell out of his boat and was like to perish, when he was picked up by a passing Dolphin. The fish tossed him astride of its back and bore him to land. The kindly act so touched the fisherman's heart that sometime later, when some of his comrades hatched a scheme to catch the Dolphin, he managed to frustrate their plan and for his interference was drowned by them. Thereupon the Dolphin carried the body to Father Neptune, and had it transformed into a flower.

**Old Greek name for a Dolphin*



D. cardinale (Scarlet delphinium)

IF YOU LOOK CLOSELY at a single Delphinium flower, or more particularly at a bud, you may, you just may, if you have a good imagination, see some resemblance to a Dolphin. The story does not *exactly* explain why the flower should be named after the fish, why not the fisherman, since it was he who was transformed?

In any case, these flowers do have an interesting shape. The characteristic spur which gives us the name "Larkspur" for the annual sorts, is actually an extension



Everything grows for Helen Witbam! This Agapanthus (Lily of the Nile), a seedling, is taller than she is. Mrs. Witbam is a frequent and much-appreciated contributor to our magazine, and is Assistant Curator of Botany at the San Diego Natural History Museum.

of the upper sepal. The flower has five brightly colored sepals, and four, (sometimes two) petals. The upper two petals prolonged backwards into the spur contain the nectary. We seldom see the four-petaled flowers since most of our garden plants are doubles, with a great many petals, usually the same color as, or lighter than, the sepals.

Long Lasting Quality

These modern hybrid Delphiniums are among the most satisfying of garden perennials, long-lasting in the house and long-lasting in the garden, where their vivid or delicate blues and purples make a happy contrast with the many sun-colored flowers that we grow here in summer. And they often come home from flower shows decorated with blue ribbons or silver trophies. The plants are handsome with their large deeply lobed leaves and impressive height of four to six feet, and the colors: deep blue, blue violet, sky blue, lavender, pale blush, deep raspberry rose, darkest violet, glisten-

ing white, azure, light and dark sky blue, gentian blue, turquoise blue, lilac, purple, mauve pink, indigo, cornflower blue, and navy; and degrees of blue-ness: pale, intense, pure, clear, deep, darkest, clean, striking, brilliant — you can see what Delphiniums *do* to the makers of catalogues! And I read only two.

You may have all this in your garden next summer by doing some planting now, right now. The large-flowered perennials come readily from seed, the fresher the better. So pick your seeds, if you left a few to ripen, walk around the house to your potting bench, and plant them. By doing it this way you can't accidentally throw them out of that cup by the sink, or run them through the washer in your pocket. Simple, isn't it?

Sow seed early in fall, in flats or pots. Set out seedlings as soon as they have two or three sets of leaves. Carefully surround them with snail bait. As plants grow, stake well; they need help to hold up those heavy spires of bloom. After

the first flowers are spent, cut the stems above the leaves and soon you will have smaller spikes of bloom on the branches. These, while less spectacular, may well be more useful as cut flowers. After all what can you do with a five-foot spike unless you are a bank lobby?

Keep New Ones Coming

Here in Southern California two or three crops of bloom will about wear out your plants so it is best to keep new ones coming along. In colder areas where the flowering season is shorter and where winter dormancy is forced upon the plants by the climate, Delphiniums will live and produce for many years. To achieve something like the cover picture (why not?) give them your very best soil, in full sun near the coast, light shade inland. Feed them regularly with your favorite balanced fertilizer. (For more information on culture see: "Growing Delphiniums for Show and Home," by Ralph E. Kircher, CALIFORNIA GARDEN, June-July 1967.)

Delphinium ajacis is referred to by Lyons in "Plant Names Scientific and Popular" as the "common Larkspur of country gardens," but I am sure he did not mean that we can't have them in city gardens. These annuals originally came from Europe but their beautiful flowers and ease of culture have made them popular garden plants around the world. This is one kind of flower which almost reaches red, white and blue. The red is a bright carmine, approaching flag red, and one of these days the break will come. Other shades are pink, salmon and navy blue, along with a shining white.

Larkspurs are among the most satisfying flowers for children to plant. The seeds are large and black enough to see and handle, and they germinate quickly; seedlings are easily distinguished from the more common weeds; and quite soon the planting is a row or bed of ferny green. They do well in almost any sunny spot and they are undemanding about water and fertilizer. Sow seeds where they are to flower, since they do not take to transplanting. This is why you do not find them in pony packs or pots in nurseries. These plants grow as high as five feet but seldom need staking since the spikes are less bulky than those of such hybrids as "Pacific Giants." The Larkspurs, like the perennials should be started in fall or very early spring.

Delphinium cardinale, pictured on this page, is one of the bright spots of early

summer in the coastal hills of California, from Monterey County southward into Baja California. This one also comes easily from seed and can be grown in pots or in a rather dry area of the garden. The effect will be quite different from that of the "Giants" and "Larkspurs" mentioned above. The stems may grow nearly as tall in favorable locations, but instead of the tightly packed double blooms and heavy stalks these have single flowers in a loose raceme upon a slender stem. By the time the flowers open the basal leaves will have dried and the stem leaves will soon follow, so that you will have reddish wand-like stems with flowers in fiesta colors; dazzling scarlet except for the bright gold of the two upper petals.

This Scarlet Delphinium is the only red one among our natives here in Southern California and it has the distinction of being listed as a "Hummingbird Flower." That is, pollination is accomplished by the hummingbirds who make the rounds for the nectar in the spurs. The blue, wild Delphiniums, of which we have several, are pollinated by other creatures. The most common blue is *D. parryi*, looking very much like a rather short (1½ to 2 ft.) garden Larkspur. This is much more common than the scarlet one, which is scarce enough to be always a surprise.

Here is a note to add to your collection of bits of interesting, utterly useless information.

Exactly one hundred years ago (another anniversary) Benito Roelz journeyed down from San Francisco to San Diego to collect plants of *D. cardinale*. The season was late, flowers had fallen, and seemingly Roelz didn't know his Delphiniums too well, because when his 2,000 plants flowered in England the following year, they were all blue, not red.

M. Roelz is described as being one of the most indefatigable of botanical collectors. He introduced many kinds of plants into European cultivation, and in great quantity. He had in fact the reputation of being a greedy and ruthless collector, shipping huge quantities of plants to Europe, in one case, ten tons of material.

Roelz's attempt to gather plants of the Scarlet Delphinium may have resulted from the interest generated by the account in Curtis's Botanical Magazine which reads:

"We have now the pleasure of making known a species of *D.* equalling if not surpassing any other in the size and sym-

metry of the plant, and excelling in the brilliancy of colour of the flower, and that as rich a scarlet as can well be looked upon. It is one of the many novelties detected by Mr. Wm. Lobb in California, and introduced to our gardens by Messrs. Veitch and Sons of the Exeter and Chelsea Exotic Nurseries. Treated as a hardy annual, it cannot fail to be a great favourite with all lovers of handsome flowers. The United States Exploring Expeditions have likewise met with this rarity on their overland journeys to California, and specimens we know are in Dr. Torrey's possession, but the plant has not been published. Our plants were in great perfection in August."

(Vol. 81, *Curtis's Botanical Magazine*, comprising the Plants of the Royal Gardens of Kew, and of other Botanical Establishments in Great Britain, with suitable descriptions. 1855.) ■

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"Dandelions" by Betty Mackintosh

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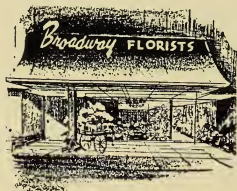
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Winners at the National Dahlia Show

(See photos on page 10)

IN OUR LAST ISSUE of CALIFORNIA GARDEN, our dahlia feature writer, Larry Sisk, pointed out what a great show the National Dahlia Show would be. He was right. The show presented about 5000 blooms all chosen by their hopeful growers as the best from their dahlia gardens. The event was sponsored by the American Dahlia Society, the Pacific Southwest Dahlia Conference, and the San Diego County Dahlia Society, and was held at the Conference Building, Balboa Park, San Diego, on August 2 and 3.

Dahlias are noted for many spectacular features in the way of form, color and size — but imagine a single flower fifteen inches in diameter! Yet, that is the measurement of the specimen *Emory Paul*, entered by W. W. Smith of San Diego, whose outsize beauty won the award Largest Bloom in Show.

The show's top winner was Charles Splinter of Lemon Grove, whose light lavender dahlia, *Almond Joy*, won him the San Diego Union trophy for best large bloom. Mr. Splinter's white dahlia, *Sterling Silver*, was named the best medium bloom and won a San Diego Eve-

ning Tribune trophy. Mr. Splinter entered more than 35 blossoms and won the advanced amateur sweepstakes. Other sweepstakes winners were: novice, W. W. Smith of San Diego; advanced novice, R. O. Beahm of San Diego; amateur, A. R. Gebhardt and open, Nat Lundgren of Santa Cruz.

More than 150 dahlia arrangements were featured, including a special non-competitive display by the San Diego Arrangers Guild. Winning for their arrangements were: novice, Yvonne Farrar of San Diego; novice sweepstakes, Yvonne Farrar; amateur, Mrs. June Grant of La Mesa; amateur sweepstakes, Martha Dorn of Oak Lawn, Ill.; advanced amateur, Mrs. James R. Buman of San Diego; advanced amateur sweepstakes, Mrs. Buman; men, Gerald L. Lohmann of San Diego, and juniors, Jimmy Lohmann and Frank Adams Jr. of San Diego.

Dahlias are very special flowers, according to Victor Kerley, president of the San Diego County Dahlia Society. Mr. Kerley said he saw the dahlia exhibit one year at the Southern California Exposition at Del Mar — and now he and his wife raise 100 different plants. Many of their flowers took first place ribbons at the San Diego Show in August.

"Because dahlia seeds don't reproduce the color or type of the parent plant, each plant grown from a seed is a new variety which is often named for its originator," Mr. Kerley said. "Dahlias reproduce type and color from roots. If a hobbyist likes his seedling bloom, he will save the roots for following years."

The exhibit in Balboa Park was a successful event, and surely fulfilled its billing. It was designed and beautifully presented as a floral tribute to San Diego's 200th Anniversary celebration.

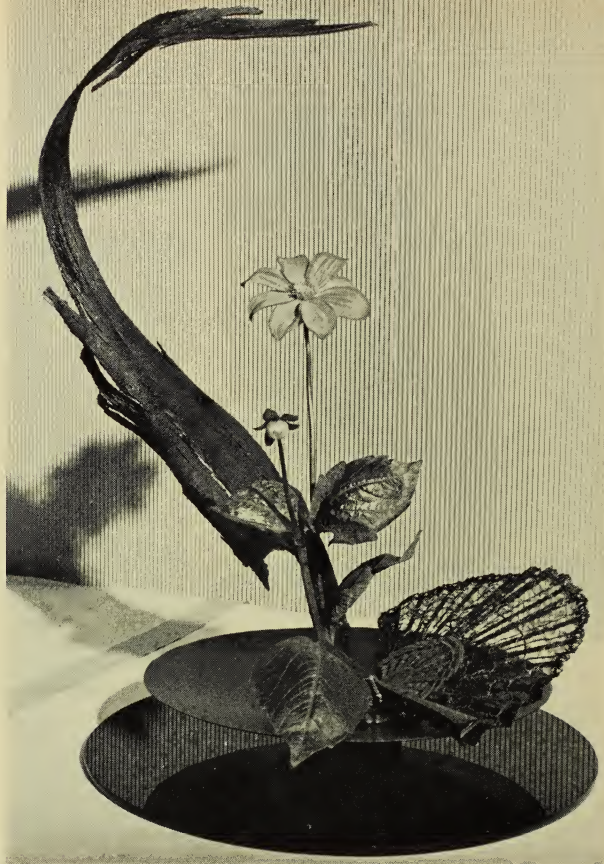


PHOTO BY BETTY MACKINTOSH



*Left: Charles Splinter of
Lemon Grove, with "Sterling
Silver," Best Bloom in Show.*



*Largest Bloom in Show,
the fifteen-inch "Emory Paul,"
grown by Mr. and Mrs. W. W. Smith*

Photos
by
Betty
Mackintosh

PHOTOS FROM THE DAHLIA SHOW



*Best of Small Dahlias,
"Curiosity," a four-inch collarette
type, grown by Mr. and Mrs.
C. G. Weland of Long Beach.*

LANDSCAPE DESIGN CONFERENCE IV

by Corinne Mathews

Chairman, Landscape Design, California Garden Clubs, Inc.

Landscape Design Conference IV will take place October 13, 14, and 15, 1969 at the Sacramento Municipal Utilities Building, 6201 "S" Street in Sacramento, California. It will be presented by the California Garden Clubs, Inc., Mrs. Milton R. Bell, President, in cooperation with the National Council of State Garden Clubs and the Pacific Gas and Electric Company of California. The Course is open to everyone, Garden Club members or not. The sole restriction is that Critics Certificates will be awarded only to federated garden club members. Critics training can be started with this course; it is not necessary to start with Course I. This course can also be used as a refresher for Critics Certificate renewal, which must be done during the last three years before certificate expiration date.

California Garden Clubs is fortunate in having an all-outstanding group of instructors for Landscape Design Course IV, and this particular Course will be an exceptionally interesting one. It will include a four hour evaluation tour of Sacramento sites conducted by prominent landscape architects.

Garrett Eckbo To Give Special Program

Garrett Eckbo, one of the principal formulators of the contemporary approach to landscape architecture, will present two important additions to the Study on Wednesday, October 15. Starting at 8:30 a.m. he will show "Cosmopolis," the North American Rockwell film describing the plight of the cities. He will comment upon the problems raised and discuss landscape architecture's role in and contribution to their solutions. Following this, Mr. Eckbo will describe and analyze "The Urban-Metropolitan Open-Space Study" conducted by Eckbo, Dean, Austin and Williams. This study is a vital part of the \$3,900,000 research program which was to form the basis of the California State Development Plan, a plan which

every Californian should be aware of. California Garden Clubs is especially fortunate to have Mr. Eckbo give this special presentation on two such closely related problems that affect the lives of everyone.

Other important contributions to this outstanding course are the "Landscape Design Resume," incorporating all previous discussion on the principles, theory and composition of landscape design given by Mrs. Geraldine Knight Scott, ASLA, Landscape Architect, Berkeley.

Mrs. Scott has had graduate studies in architecture and landscape architecture, Cornell; a long professional career of private estate and garden design; was Assistant to the Citizens Housing Council; has designed schools, gardens, and large professional building sites; has taught adult education, lectured at the University of California, Berkeley, traveled in Europe, Japan and Mexico, visited the Mayan sites in Yucatan and Guatemala and several Inca cities in Peru; is chairman of the Design Review Committee. She is returning after having participated in the first and second series of Landscape Design.

"Contemporary Design," with David Streatfield as guest speaker, will include integration of landscape design and architecture, modern uses of many types of materials for surfaces, new structural material and contemporary vs. modern design. Mr. Streatfield is from the University of California Department of Landscape Architecture. He is a graduate Architect and Landscape Architect, respectively, from Brighton College of Arts and Crafts and University of London; MLA, University of Pennsylvania, has taught Architecture and Landscape Architecture at Clemson University, South Carolina, Michigan State University and University of Pennsylvania. Mr. Streatfield has engaged in professional practice and consulting in architecture and landscape architecture for private and governmental

agencies in England and U.S. He was awarded two British prizes for excellence in architecture.

"Subdivision and Land Development" will outline basic principles of land subdivision as they affect prospective home owners and the community as a whole. Ray Belknap will be the speaker and Sasaki-Walker and Associates.

"Planning and Zoning," discussed by Thomas Cooke, will briefly cover the organization of municipal planning agencies under the Enabling Acts emphasizing participation of garden clubs or individual members and defining limitations of such participation.

"Herbaceous Material and Maintenance," given by Anton Kofranek, will investigate seasonal displays, color schemes and successions of blooms for landscape effects along with domestic landscape design maintenance.

"Redesign," given by Clara Cooper, Mr. Downey and Mr. Robert Buchanan will cover renewing design because of need or desire arising from a new use of an area or unsightly conditions. Mr. Buchanan, B.S., University of Michigan and graduate study at University of Michigan, Harvard University and Fellow American Academy in Rome has had professional experience with the National Park Service, Washington, D.C., as a Designer working on projects in Watertown, Mass., Nigeria, Tunisia, Greece, Mali, Assistant Professor at University of California, and Harvard Graduate School. He has received several certificates of Merit, and performed such services as judge for the Marin Art and Garden Show and the Monterey County Fair.

The state Landscape Design Chairman urges that as many people as possible take advantage of this course by attending. To register write Mrs. J. Donald Drake, 4413 Belcrest Way, Sacramento, California 95821, by October 6, 1969. ■



Architect Sim Bruce Richards (back row, center), a non-accredited flower-show judge, finds himself surrounded by ladies who have their "papers." Accredited judges in the front row are: Mmes. John Marx (Master Judge), Ralph Goldsmith (Master Judge), J. L. McCarter, Harry K. Ford, Ralph Rosenberg, Lyle Carringer, Clarence Benson and Gerald Dennis. Judges not present are Mmes. H. B. Cutler, Roland Hoyt, Stanley Miller, E. A. O'Brien and Melvin Stewart. Student judges, now judging, are (in the back row): Mmes. Floyd Swingle, Donald A. Innis, Raymond Moore, John Farleigh and Albert Lawrence. Not pictured are: Mmes. Benjamin Berry, Odell Conoley, Helge Erickson, Jose Garcia, Edward Owen, and Raymond Shore.

"Here Come De Judge"—Now Hear This

by Virginia M. Innis, President, San Diego Floral Association

ON APRIL 24 OF THIS YEAR all accredited flower show judges, not only in San Diego, but all of Southern California had accepted assignments to judge flower shows. Those who did not judge were infirm or on vacation. In San Diego County there were three major flower shows opening that day . . . Escondido Garden Club, The American Iris Society, and Ramona Garden Club. All were standard shows which prescribe that two of the three judges on each panel must be accredited.

The judging of flower shows is a judge's contribution to society. It is difficult for a judge to say no when an acceptance means a garden club or plant society may have a standard show. Dedication has contributed to the local judges' having been overworked for many years.

Student Judges Added

Now the local judges gives a slight sigh of relief. Known as the Southwestern Group, Judges Council of California

Garden Clubs Inc., which is a part of the National Council of State Garden Clubs, the San Diego chapter is composed of thirteen members. Relief is the addition of twelve student judges who may serve on the panel with the accredited judges. Within a year or so, the students may become accredited amateur judges. After having judged for eight years and further study, an amateur judge may become a Senior Judge—and hold a Life Certificate. Master judges must hold a Life Certificate and fulfill further study.

The local student judges are products of the Flower Show School which the Palomar District of California State Garden Clubs started about a year and a half ago. Student judges have been presented lectures covering horticulture and artistic arrangements which compose the two major divisions of a flower show.

Judges have generally been drawn into their avocation out of interest in horticulture or design or both. Judges realize

that the amateur flower show fulfills a threefold purpose. It stimulates interest in horticulture, develops aesthetic sense, and is educational. The National Council Handbook for Flower Shows lists these specific purposes.

Flower shows encourage participants to produce better plants. One learns to discriminate between the ordinary and the distinctive. Breeders and hybridizers are constantly improving plants by making them more disease resistant, more fragrant, colorful or interesting. Flower shows encourage exhibitors to try the new offerings.

Keep Up With "What's New"

Judges attend lectures to learn about "what is new." Better still, they learn by judging with other judges and seeing new specimens. Standards are the same for becoming a judge in California as in New York. However, the Californian may have a thrill if she is visiting New

York and is invited to judge flowers not commonly found in California.

Before local judges were accredited flower shows were judged by people considered to be competent. Not all garden clubs were as astute as The San Diego Floral Association, which produced the first flower shows for San Diego. Arrangement judges were frequently artists, architects, and sculptors. The standards used to judge artistic arrangements are still the basics of artistic professions—space, line, form, pattern, texture and color.

Architect Sim Bruce Richards has served as a flower show judge. An artist who grows orchids, he enjoyed judging the arrangements in the orchid show. In fact, he still attends the orchid shows and does his own private judging after the awards are given. The Orchid Society must invite Architect Richards to judge again. Under the present rules, two people judge, and a third party may be some knowledgeable person.

Other than the nationally accredited judges, many plant societies train judges to specialize and judge one plant or flower. Some of these societies are the American Rose Society, The American Iris Society, etc. Almost all the major plants grown are represented by plant societies of the same name. An iris or rose judge will know how to judge the plant and will know the names of the various roses or iris. Unless the judge grows the plant, a nationally accredited judge will know the standards of measurement for judging but may not know the name of the particular iris or rose.

Architect Sim Bruce Richards recalls that in the past judges were frequently hated for their decisions. Amateur Judge Martha Rosenberg still claims that the only people who are happy with the judges' decisions are the blue ribbon winners. However, she also remarks that exhibitors of today seem to be more appreciative of the judge's task. Those who exhibit frequently are the best sports.

Aside from acquiring knowledge, judging is not an easy task. Sometime the three best arrangements in a show are competing against each other and only one blue ribbon may be awarded. Sometimes there will be two arrangements competing against each other and twenty-five competing against each other. The judges must decide if the two deserve a blue and red ribbon or a red and yellow or any ribbon at all. In judging the twenty-five, the judges may divide the ar-

rangements and make two classes. They cannot divide on the quality, however, but rather on how they are placed on the show table. The two best arrangements may be side-by-side. The one that is awarded the blue ribbon must be a little bit better than the one which wins the red ribbon. And the red ribbon winner may be better than the blue ribbon in the next class.

The next time the floor of a flower show is being cleared with the announcement . . . "Here comes de judge" . . . Remember the qualifications of a judge are: knowledge, experience, fairness, courage, tact and kindness. The judges' services are free and the task isn't easy. ■

APPROXIMATION TO HAPPINESS

What do I consider the nearest approximation to happiness of which the present human nature is capable? Why, living on a farm which is one's own, far from the hectic, artificial condition of the city—a farm where one gets directly from one's own soil what one needs to sustain life, with a garden in front and a healthy, normal family to contribute those small domestic joys, which relieve a man from business strain.

THOMAS A. EDISON.

In the glens of Parnassus there are hidden flowers always blooming . . . You will find that youth does not vanish with the rose, that you need never close the sweet-scented manuscript of love, science, art or literature. In them youth returns like daffodils that come before the swallow dares, and take the winds of March with beauty; or like the snap-dragons which Cardinal Newman saw blossoming on the wall at Oxford, and which became for him the symbol of hope. For us they may stand as the symbol of realization and the immortality of the human intellect.

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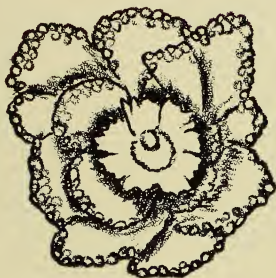
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SUCCULENTS OF THE SEASON

by
Mrs. Peter "Nibby" Klinefelter

TITANOPSIS CALCAREA, "Jewel Plant"



TITANOPSIS CALCAREA, ty-tan-OP-sis from the Latin for Titan the Sun God plus the Greek "opsis" equals like, from the resemblance of the many-rayed, bright golden yellow flowers to the sun, kal-KAR-ee-a, pertaining to lime.

Titanopsis calcarea, commonly called the Jewel Plant, is one of eleven species of small, tufted, rosette-forming plants of the mesembryanthemum family. The densely crowded leaves are about an inch long, widened and almost triangular near the tip. Blue-green to purple-red, the ends are studded with gray or rosy-white warts which match the weathered incrustations among which they grow.

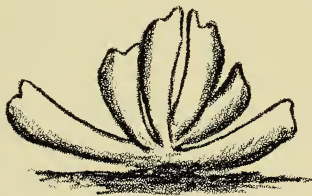
Their mimicry is such that they were not discovered until 1907 when Prof. Marloth of Cape Town was lounging among the limestone and crushed a plant while taking a break from plant collecting in Cape Providence. *Titanopsis* is buried to the tips of its leaves in its native habitat, by the way. Another well-known species of this genus is *Titanopsis Schwantesii* which has more erect leaves with smaller warts on the somewhat rounded tips.

Grow your Jewel Plant in a very sandy but rich soil and add some broken bits of old lime mortar. It's difficult to keep this little plant in good shape over a long

period of time as it resents overwatering, especially in winter. Watering should be done carefully in all seasons for water between the leaves soon causes decay.

Propagation is easy from seed and they flower the second year. It says in the books. Also, I remember reading that the mesembryanthemums do not release seeds until the rainy season.

* * *



HEREROA DYERI, "Elk's horns"

What a surprise it was to me to find that our tough-textured, compact little plant-of-the-month, Elk's Horns, was a member of the Mesembryanthemum family. Further research revealed mesembryanthemum to mean "moon flowers." One

authority referred tenderly to members of the family as "Children of the Sun."

Hereroa (her-er-oh-ah) *Dyeri* was named after a native race of Southwest Africa—the Hereros, in whose country many of these plants were found. Elk's Horn is one of over 20 species of *Hereroa*. Its thick, nearly stemless leaves cluster together to form short tufts only a few inches high, triangular, incurved, curiously flattened and notched at the tips, becoming notch-shaped with maturity.

The yellow flowers look like fringed daisies but actually are a single flower, rather than a composite. They bloom in spring and early summer, opening in the afternoon. They flower the second season from seed. The five-sided fruit capsule has an ingenious system of valves to regulate its opening, for unlike most seed pods which open when dry, the mesembs open only when wet. Another example of Nature exercising control over climate as well as a culture hint.

Hereroa Dyeri is easily grown in full sun in well drained soil, open and porous. Use two parts coarse sand, one part decayed leaf mold and one part good garden soil. They need no fertilizers which can cause abnormal growth and they make good pot plants. Another interesting species of this genus is the "Shriner's plant" in obvious reference to its resemblance to a "Shriner's badge," known in botanical circles as *Hereroa Nelii*. ■



CALIFORNIA GARDEN
CLASSIFIED ADS

(See Page 28)

Root Development of Container Trees

*Reprinted from the 43rd Proceedings of the International Shade Tree Conference, 1967

by Richard W. Harris
Department of Environmental
Horticulture
University of California, Davis

Tree performance in the landscape depends in large measure on the way the trees have been grown in the nursery. In studying ways to improve growth of young trees when outplanted, we kept encountering two problems. Many trees were doomed to failure or poor growth due to 1) kinked or girdling roots and 2) weak trunks that could not support their tops.

Your contributions to the Memorial Research Fund are supporting the research of Lanny Neel on certain aspects of trunk development. His and related field studies of others have been thwarted because certain growing techniques could not be fairly evaluated. Many container-grown trees available had weak trunks with little leaf area along the trunk. In order to obtain suitable research material, as well as to study factors involved in producing sturdier trees, we have undertaken a series of experiments related to nursery production.

Even though we were concerned primarily about the top of the trees, we were not able to neglect the roots. For example, one of these experiments is studying the influence of the amount of space allotted each plant. As the space for each plant increased so did the exposure of the container to the sun. Soil temperature was a factor that had to be reckoned with and evaluated.

Three aspects of rooting of container-grown plants will be discussed, including: 1) transplanting of seedlings; 2) root development patterns in gallon containers; and 3) root-soil temperatures in containers of different exterior surfaces subjected to different exposures.

Kinked and Circling Roots

Serious root problems occur when plants are left in containers for extended periods. These can happen in small or large containers. However, many people

The Oki Nursery, Sacramento, California, generously supplied most of the plants and care for the experiments on which this paper is based.

have observed that the most difficult to correct, if at all, were the twisted and girdling roots growing close to the main trunk near the surface. It appeared these were initiated in the first and smallest container in which the tree was placed.

A detailed study with Dwight Long of the Saratoga Horticultural Foundation and William Davis and William Stice of the Agricultural Extension Service confirmed these observations. The importance of the first move of the seedling from the seed flat to its first individual container was dramatically shown.

The roots of most seedlings are longer than the depth of the container in which they are to be placed. If the roots are not shortened and carefully placed in the container, they may be sharply bent or kinked. A point of weakness is created. Water, nutrient and food movement may be restricted. In addition when growing in the landscape, a plant with such a root defect may require additional staking to stand upright, and may never become securely anchored to the soil. Such root kinking also can be the forerunner of a girdling-root situation.

Root circling can be induced by small impermeable pots. Taprooted and rapidly growing plants are especially susceptible. Unless the roots are properly pruned when moved to the next-sized container, circling roots will enlarge into girdling roots. Poor growth of the plant in the nursery as well as in the landscape results. Death may result in a few years.

If these initial kinked or girdling-root problems are not corrected when the tree is placed in a gallon or larger container, they are almost impossible to correct later.

Kinked and girdling roots can be readily seen, when present, on many plants since they occur near the trunk at the surface. After they are exposed due to the method of irrigation. I would not buy or plant a tree or shrub without first inspecting the roots just below the soil

surface at the trunk. This can be done fairly easily with a hose.

Horticulturists, including nurserymen, are concerned about this problem and steps are being taken that will improve root quality in the future.

Root Development Patterns

To better understand the circling root problem, we followed root development of three tree species. Two- to three-inch seedlings in 2¼-inch peat pots were placed in gallon cans. They were grown under lath in equal parts of loamy sand and redwood sawdust at a moderate fertility level.

At about three-week intervals during the six-month study, six plants of each species were selected at random. The top of each tree was removed at the soil. The soil was divided into an inner core and outer cylinder of equal volumes. Each of these was further divided into four layers of equal volumes. The soil was removed from the roots. The roots from each soil zone and the top of the plant were weighed fresh.

Within four weeks after transplanting, roots of *Eucalyptus sideroxylon* and *Pinus radiata* had more roots (weight) in the bottom fourth of the soil than in the upper fourth of the soil. In contrast, even though the roots of *Pistacia chinensis* reached the bottom of the can in two weeks, only at the June 17 sampling were roots in the bottom heavier than in the top layer of soil. The trunk root accounted for most of the weight in the upper layer of soil for each of the species.

During the first three months, root development in either of the two center layers was less than half that in the soil layers above or below. If root development in these center layers could be increased compared to that in the bottom layer, plants could be grown for a longer period before root circling would become serious. A graduate student at Davis is

attempting to encourage root branching and development in this center zone particularly in taprooted plants. He has some encouraging leads.

Only in the pine and then after four months, were there more roots in the outer cylinder than in the inter core of the bottom layer. It would appear that there was a greater tendency for downward rather than outward root growth.

Soil Temperature

High temperature of soil in exposed containers was raised as a possible detriment to wider spacing of container-grown trees in the nursery. We were interested in the magnitude of soil temperature ranges under Central California conditions (Latitude 38°N).

Most metal containers are thinly coated with black asphalt; others are painted a dark color e.g., green or red. Beginning in July, gallon cans with small pine (4-5") or laurel (6-7") plants were 1) left black as originally coated; 2) painted with white latex; 3) covered with heavy-duty aluminum foil; or 4) shaded on the east or west by a 1 x 6-inch board. Three cans treated the same were placed so one was exposed to the east, one exposed to the west and one placed between the two. A six-inch aisle separated the east and west rows from cans in adjacent rows not in the experiment. The set of treatments was replicated five times for each species. The soil mix was equal parts of loamy sand and redwood sawdust. The plants were irrigated by sprinklers each day at 4:30 p.m. (PDT).

Temperatures were taken at a depth of three inches. Except when recording the temperature at the center of the container, the thermometer was placed to record the temperature one inch in from the exposed side of the can. The temperature of the soil in the cans exposed to the east did not go above 100°F. The soil temperature of the west-exposed black cans reached a maximum temperature of 115°F and remained at or above 100°F for five hours each day observed. The east-exposed cans were shaded to the three-inch temperature depth until 9:00 a.m. by the row of containers six inches to the east. Also, night air temperatures in the low sixties, with corresponding soil temperatures, limited the temperature rise of the soil by the time the sun had reached its zenith.

The highest soil temperatures were in black cans exposed to the west, followed in decreasing order by white, foil and those shaded by wood. Even the center

of black cans exposed to the west reached temperatures of 100°F.

Optimum soil temperatures for root growth vary greatly depending on the species. However, the maximum temperature they will withstand is only 10°-20° above the optimum (3). For example, *Pinus taeda* has been found to have a maximum root growth between 70° and 85°F, but less than 10 percent of the maximum rate at 95°F (1). The roots of a number of conifers are killed in a few hours at 115°F (8).

Other species may not be as tolerant of high soil temperatures as pine. Several workers have found that peach roots grew most between soil temperatures of 65°-70°F (4, 5). Root growth was reduced more than 40 percent at 80°F and 97 percent at 90°-95°F. Roses in three-gallon containers had the greatest fresh weight when grown at soil temperatures between 52° and 62°F (7). Fresh weight was a third less when grown at 72°F.

Experimental results involving soil temperatures and root development vary with species, stage of plant development and environmental factors (6). Then too, most experimental temperatures are constant for the entire body. This is not true in the nursery or landscape. In fact, in gallon containers soil temperatures commonly varied 50° each day during the summer. Length of exposure of roots to critical temperatures is almost as important as the maximum temperature.

Roots of plants of many species growing on the western edge of beds of gallon cans were examined. In all cases, there were few or no roots in the western third of the can.

These plants had only about two-thirds of the soil filled with roots and the tops were more completely exposed to the sun. Even so, the plants were almost as large as those which were growing in the interior of the beds. Apparently, daily irrigation with nutrient solution can keep the

tops growing vigorously in spite of a restricted root system and increased exposure of the tops. However, this may prove a disadvantage when the tree is placed in the landscape. Initially, such a tree would have a smaller soil volume from which to absorb moisture compared to a plant which had filled the container soil more completely.

Protecting the south and west sides of container beds will keep soil temperatures from exceeding 100°F on all but the hottest, longest days of the year.

If spacings greater than can-to-can improve trunk development, cooler containers will be needed. Soil in isolated cans reach soil temperatures several degrees warmer than that in cans in the west-exposed rows of container beds.

Experiments now under way and those being planned should provide better information on which to develop production techniques. ■



There are two tragedies in life. One is not to get your heart's desire. The other is to get it.

—George Bernard Shaw,
Man and Superman

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Mrs. Thomas L. Ellsworth, West Los Angeles gardening enthusiast, and Marshall Lewis, Bulb Division Manager for Germain's, Inc., evaluate tulips grown from bulbs especially pre-treated for Southern California growing conditions. Research is being conducted at the Bel Air residence of Mrs. Ellsworth.

Tulips

Southern California Style...

Tulips soon may grow in Southern California with the same ease, elegance and dignity as the tulips of Holland.

That is the objective of a research program recently conducted at the West Los Angeles residence of Mr. and Mrs. Thomas L. Ellsworth and sponsored by Germain's, Inc., Los Angeles based horticultural firm since 1871.

Mrs. Ellsworth, an enthusiastic gardener and garden lover has served as President of the Bel Air Garden Club, Chairman of the club's Garden for the Blind and also as Chairman of the Public Planting Program of the Bel Air Property Owner's Association.

"In the near future," said Mrs. Ellsworth, "Southern California home gardeners should be able to grow tulips in their own gardens as perfect as those raised in Holland."

"The most desirable tulips for this area," she continued, "are the late flowering, tallest growing varieties. It's also best to plant in a cool spot and late in the season."

"The big problem facing local gardeners," she said, "is that up to now growing top quality tulips required refrigerating the bulbs at 40° degrees F. for from 20 to 40 days just prior to planting. However, the average home owner just won't be bothered with this fuss."

Attempting to solve this problem, Marshall Lewis, Germain's Bulb Division Manager, has developed a program for pre-treating the bulbs at the growing fields, then testing them at the Ellsworths.

"Four of the pre-treated varieties that we tested," said Mrs. Ellsworth, "were absolutely superb."

Additional pre-treated varieties are now being evaluated and if successful will be offered to home gardeners for fall planting this year.

In the meantime both Mrs. Ellsworth and Lewis are looking ahead to the day when tulips will vie with the palm tree as one of Southern California's more notable landmarks.

Select Large Specimens with Care

Large, mature trees and plants have become a popular item on San Diego County's landscaping market, and these plants are doing much to beautify new shopping centers, public buildings, and homes. James M. Moon, San Diego County Agricultural Commissioner, cautions, however, that unless care is exercised in the selection and movement of such plants, they may represent a hazard instead of a benefit.

Most of these large specimen plants are produced in licensed nursery growing grounds, where rigid standards of pest cleanliness are required. County agricultural inspectors regularly make inspections in these growing grounds to insure that the nursery stock meets required pest cleanliness standards. Plants grown under these conditions do not represent a problem.

Trucks hauling one or more mature olive trees or other plants and trees have become a common sight along many high-

ways in the County. They are most noticeable where new housing areas, motels, apartments, and other business properties are being landscaped.

"Some of these trees," Mr. Moon said, "are moved from old, abandoned orchards, wild growth areas, or rights-of-way for new freeways where old homes are being razed. Such trees are often infested with plant pests, and their indiscriminate moving from one part of the County or State to another can spread destructive insects, weeds, nematodes, and plant diseases into new areas. Many of these pests are of limited distribution at present, and they could be difficult as well as expensive for the property owner to control if they become established in new areas."

Landscape contractors, real estate developers, and trucking firms should be aware that even though movement is all within one county, California's agricul-

(Continued, page 18)

Large specimens . . .

tural laws require anyone who moves plants to notify the county agricultural commissioner at the point of destination so that an inspection can be made. This inspection is not required, however, if the plants were purchased at a retail nursery in San Diego County, or if they are accompanied by a California Nursery Stock Certificate.

Mr. Moon said that the laws also require that an official certificate accompany all plants that are shipped from one county to another, and this certificate is issued by the agricultural commissioner of the county of origin. Moving trees or plants without notifying the county agricultural commissioners concerned is a misdemeanor.

"In addition, expense and trouble may be avoided by having the trees inspected before digging them up," said Mr. Moon. If they are rejected after having moved a great distance, the trucker, landscape contractor, or developer is faced with the expense of fumigating or disinfecting the plants, or returning them to the point of origin. An even greater penalty would be the knowledge that one had been responsible for introducing a new plant pest into an area where it could be harmful to landscape or other plantings. ■

Dahlia Diggin's

by Larry Sisk

Seedlings may be transplanted right from the starting flat into the ground without missing any growth, if the ground is warm.

Seedlings and other transplants should be set out in late afternoon for best results. Otherwise, sprinkle them and shade immediately for a few days.

Use a one-inch paint brush as a sulphur duster, and keep a container of dust handy all the time.

Mix a fungicide with your dusting sulphur used while cutting or working with tubers, taking cuttings, etc.

Razor blades in holders are best for taking cuttings.

Keep a sterilizing dip handy and dip cutting tool after each cutting.

GERANIUMS

by Muriel Curtis

Watch all geraniums for dryness now. Contrary to what most people say, geraniums damage easily from extended dryness which damages the roots.

Dwarfs require more water and more food now than regular geraniums. Feed them twice a month in pots. Make feed one quarter to half strength. About this time, you can use 5-20-5, 8-8-8 (rose food) is satisfactory with supplemental feeding of superphosphate. Try ¼ teaspoon of Epsom salts to each gallon of food.

White fly is especially bad right now. Even worse when tomato plants are near! Spray every two weeks with Meta-Systox or Malathion.

Take good care of your geraniums and you'll have beautiful plants with lavish color as a reward.

(Ed. Note: Mike and Muriel Curtis will, we hope, give us calendar of care hints on geraniums for each issue of California Garden. A tour through their collection of rare geraniums was a thrilling experience for me when I went to their Chula Vista home to talk to them about this advice for geranium growers.) ■

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CABBAGES

by Rosalie F. Garcia



PHOTO BY BETTY MACKINTOSH

• *Our vegetable garden expert has come up again with a comprehensive article about one of our excellent foods. Mrs. Garcia always includes some little-known and interesting background information on all of her well-chosen subjects.*

THE COMMON headed cabbage is not a rose, and never will be a rival, but with some modern public relations promotion, and consideration of its better nature, it can take its place on the table as a delectable dish of real class and distinction. It is so common that the grubbiest little grocery store anywhere in the temperate zones of the world will have a few withered heads. It is as edible raw as cooked, full of vitamins and minerals and bulk roughage that civilized people need with their refined diets. The weight watchers have no better ally. They can eat a big dish of raw or cooked cabbage, feel full and satisfied with the smug knowledge that no more than fifty calories have been added. They are amenable to all kinds of dressings and sauces, are available in any market in any season. Excepting potatoes, what other vegetable is such a staple?

Yet millions of households never serve any of the cabbages in any of the varieties because: potent cooking smells through the house; it is hard to digest; it does not look pretty, and tastes like something spoiled. (Those cooks do not know how to present it. They don't even know a good head of cabbage when they see it.) It should be firm with the outer leaves crisp and green, unwithered and free from damage. The inner white leaves should be white and tightly folded.

White leaves on the outside are a sign of over maturity, are tasteless and tough. Cabbage buds, sometimes for sale, should have tender green leaves.

Some Cooking Hints

There are two main ways of cooking all cabbages. The headed varieties should be quartered or shredded with a sharp knife, all core removed except a spine to hold the slices or quarters together and put in a pot of boiling water that half covers the cabbage and cooked in open kettle eight or ten minutes. All odors can be eliminated by throwing two or three slices of stale bread on top of the cabbage and removing it when the water is poured off. The other way is to put the cabbage in a shallow-bottomed pan with just enough water to create steam, cover tightly, turn down the heat and allow to steam eight or ten minutes. Uncover immediately and season with a preferred sauce, pepper, salt and butter or just seasoned salt. This is the preferred method and one that is best for all green leafy and stem vegetables.

Overcooking is what ruins any of the cabbages, and causes the unpleasant taste, odor, and indigestibility. If the cabbage itself is over mature that adds to its unpalatability. Some may remember the days when quartered heads were put in a

pot with cured pork and cooked for hours until the cabbage was a deep salmon color, and smelled to high heaven. Those who ate and relished this dish had pioneer digestions. To top it off, they sometimes doused it with a fiery pepper sauce!

Raw cabbages should never be grated or ground, but shredded with a sharp thin-bladed knife or mechanical shredder, then crisped in ice water for about an hour. If they are fresh out of the garden, crisping is not necessary. The difference between a garden-fresh head and the supermarket variety can drive one to planting some. Deterioration of a kind sets in as soon as the heads are harvested, even though cabbages of the headed varieties are considered good shippers and keepers.

Shredded cabbages are good plain as finger food if fresh and crisp, as well as with the many salad dressings of the sweet-sour variety which produces our staple cole slaw, our favorite way of presenting headed cabbages. It keeps well refrigerated and holds its textured quality to accompany snacks and all kinds of informal meals and picnics. A covered bowl of cole slaw in the refrigerator is a fine staple to go with sandwiches and hamburgers. The dressing can be rich with sour cream and mayonnaise or low calorie with yogurt and one of the synthetic sour creams.

Continued

Where Did Cabbages Come From?

Cabbages appear to have been around almost as long as civilization, and perhaps before. They are traceable back at least four thousand years to the Chinese who were the first to cultivate so many of our fruits and vegetables. The Egyptians and Romans knew cabbages and the Germans took them for their very own. The Germans did not invent sauerkraut, the Chinese did, but they took to it as a nation. The Tartar armies brought it to Europe where it soon caught on. It was food that would keep. All one had to do was to shred the cabbage, layer it with salt which drew the sugar out of the cabbage. Bacteria fermented it, lactic acids formed and produced the tangy flavor. It went well with meats and produced the needed vitamins and minerals that armies on the move needed, and people in cold climates could use when they had no fresh foods. The over-indulgent Romans learned that the lactic acid in the sauerkraut cleansed the intestinal tract and they could recover more quickly after the gourmandizing feasts if they filled up on sauerkraut the next day. In modern times sauerkraut juice is a well-known chaser, and fine for a hang-over. (Filling up on raw cabbage or kraut is better than a purge for many.)

It is even stylish now to find a layer of sauerkraut in meat sandwiches or a side serving on a plate, a bowl at a cocktail party. Try that and see how many go for it! Even the old Jiggs dish of corned beef and cabbage is on the menus of the best restaurants and is popular with the gourmets.

The headed cabbage and sauerkraut came to us from Europe with our first immigrants and were staple foods for pioneer Americans in all parts of the country. They were so common that when affluence brought its great variety of foods, people almost forgot beans and cabbages, and only now are they being rediscovered and appreciated. They are still cheap, something to consider when marketing.

Cabbages are not for everybody, for they are full of fibers and when stale produce gases which make one uncomfortable. But when they are properly harvested and presented are as healthful as any vegetable, and equal to any other in digestibility.

Different Kinds—But Still Cabbage

The headed varieties are what we think of as cabbages, but there are many others that belong to the Brassica genus, and

all belong to the mustard family. They have in common a shallow root system, a liking for cool temperatures and plenty of water. Different parts of the plants are edible. Some form heads of tightly coiled leaves and are the common headed ones. There are early and late varieties, round, oblong, big and little heads. There is even a Mini now, advertised by Burpee, which makes heads no larger than one's fist. Most of these are smooth leaved, but there is the delightful crinkled-leaf Savoy that comes in the spring and early summer. It cooks in a few minutes, and is fine shredded and raw. The handsome red head with its opalescent purple outer leaves is as decorative in a flower bed as a clump of pansies. It is edible only when young and tender, and it most often presented in sweet-sour dishes and relishes.

Brussels sprouts are tiny heads that grow as buds on a tall stalk. Although these miniature heads have all the objectionable qualities of the big heads, if too old and improperly cooked, they had a later development and as something rare were introduced on the tables of royalty and the rich in Europe and have kept a kind of status. Having about a half-dozen plants in a garden will furnish all a family can want, and with the bonus of being able to harvest them just as they mature, so others higher up on the stalk can develop. They will go on producing the next year if kept disbudded and watered and fertilized.

Kohlrabi is a peculiar headed cabbage even if it is most often thought of as a turnip which it resembles. It grows as a knob on a stem an inch or so above the ground, which should be harvested when about the size of an egg, peeled and steamed with cream. It has a delicate flavor that is a cross between a good turnip and a flavorful cabbage. It is not as popular as it should be, and someone should promote it.

Broccoli and cauliflower are cabbages of which we eat the buds of the florets that appear at the top of the stalks. They are also later developments by Europeans and have kept their places as the aristocrats of the cabbages. Broccoli is the queen, but is often ruined by overcooking. It is better to serve it cold than to try to keep it hot over low heat where it continues to cook and often arrives lathered in sauce, a bilious yellow-green mushy mess that it not fit to eat. Hollandaise and Bernaise sauces are elegant accompaniments, but when steamed until

a tender translucent green and still warm, a little season salt is all that is needed. Do not buy broccoli if little yellow florets show among the buds, and the stems are tough. They are past maturity and will be strong and bitter. One really never knows broccoli unless he has cut the brittle stems and cooked them immediately. No vegetable responds to immediacy as the lovely broccoli buds.

Cauliflower is available in winter and spring and the younger and fresher it is, the better the flavor. Tender florets are edible raw in salads or finger food, and lend well to pickling. The outer leaves should be crisp and tender and can be saved to cook separately. The common varieties have white florets, but Burpee has a lavender-headed one that he says grows faster and is more tender than the white.

The semi-headed or stemmed cabbages, even sometimes called the celery cabbages are the slim white Napa or Chinese, which are delicate, crisp, spicy and are good raw or cooked. The hearts of these quartered and served like celery are very fine on the relish plate. They cook quickly, but are somewhat watery, and need rich or spicy seasoning to make them interesting. Bok Choy, a favorite of the Orientals, who use the tender stems in chop suey, may use both the stems and the tender leaves at the tops of the stems. Older stems are tough and strong, and only those are found in the markets, which accounts for this delectable vegetable not being more popular.

Probably the least appreciated are the leafy cabbages which includes the kales and collards, the latter having reached the heights of popularity in the South. They are best after a touch of frost, and cooked slowly with fresh or cured pork. Such a dish with corn bread is a satisfying and well-balanced meal, which should not be scorned. Collards are very hardy, can be stripped of leaves many times and grow fresh ones over a two-year period. The kales, both smooth-leaved and curly are handsome and decorative plants which can hold their own in the flower garden. Both green and purple leaved ones are available. They are at the bottom of the list as edible, but at the top with the nutritionists for their vitamin and mineral content. The tenderest leaves near the top of the plant can be stripped from the stems and veins and steamed as other cabbages, but it is a rare cook who can present a tender, palatable dish. In the market fold the leaves back for flexibility,

which means they are tender. The tiniest leaves may go into a tossed salad where they add a tang of mustard.

All of the cabbages will grow in any of the temperate climates, but in California we grow them the year round, and in the hottest weather the Coastal regions have them fresh and crisp for us. Of the headed varieties there are early and late. Burpee has its Earliana, the big, round Copenhagen, and the pointed Jersey Wakefield. The later ones planted in the spring and maturing in the fall are Sure-head, Round Head and Wisconsin Hol-lander.

Broccoli, Brussels sprouts and many of the early cabbage plants are on sale in our nurseries in late fall and are ready to set out then, and more are there in the spring. Most cabbages do well in Southern California in the winter and spring only.

All cabbages grow from seeds only, and should be planted in flats and set out when the plants are four or five inches tall. They respond to good garden soil of equal mixture of loam, sand and humus. Commercial fertilizers and fish and plenty of water are all they need. They have shallow roots and do not need much cultivation.

Local nurseries carry some cabbage seeds, but the seed catalogs of California have those most adaptable to our climates. Burpee at Riverside is our closest seed grower and lists many of the less commercial and least grown varieties. Many of them are what the home gardener should choose, for they are too delicate for commerce and are much better to eat. Different varieties may take from fifty to ninety days to develop. Look at the slower developing ones, for they are often the best, and for that reason are avoided by commercial growers. Our seed men in the Lompoc and the San Francisco areas also have fine varieties and many of the new hybrids, especially in broccoli and cauliflowers.

The coldest part of the garden is best for cabbages, if it is sunny.

Worms are the worst pest for all the cabbages. They will insinuate themselves into the hearts of the heads and florets. Watch for them and pick them off, and dust with a non-toxic vegetable dust.

Remember that it is the *old* cabbage that gives the poor impression of one of our most succulent, easily grown, and versatile vegetables that nearly all can enjoy. ■

HOW TO GROW EPIPHYLLUMS:

Potting

Since as epiphytes they do not have a large root system, it is best not to over-pot. A plant 6" to 8" tall will need about a 3" pot; a plant 12" tall a 4" pot; a plant 16" to 24" tall a 5" pot. Put a piece of broken pot or pea gravel in the bottom for better drainage. If your plants dry out too rapidly, which they generally do in dry weather, I would suggest that a 4" pot be placed in a 5" pot, etc., and the space between the two pots be filled with sand or peat. It will serve to keep the roots both cool and moist. This will do more than anything else I know of to keep your plants healthy and vigorous.

Care

They may certainly be kept in the house the year around, but those who are fortunate may be able to place them under a tree or on the partly shady side of a porch during the warm summer months. This will give them more vigor and sturdier growth. They will of course require but little care. I often bury the pots in sand to keep them from drying out too rapidly and to keep the roots cool and moist. They may be buried in the ground or, if too wet, in coal ashes. While they are in growth, give them plenty of water, and about once a month, a little compost or steer manure "tea." (Soak aged manure or compost in water for a day and pour off the "tea.") Remember, in taking plants outside from

the shaded depths of your house that direct sunlight is liable to burn or scald them at first. Place them in a shady location for a week or so, so that they may get used to the light slowly, and then they may be placed in broken sunlight without damage.

How to Make Orchid Cacti Flower

Orchid cacti flower in April, May and June on last year's stems (they have no leaves). So to have them in flowering condition get vigorous, well matured, plump stems on your plants during their active growing period, which is spring and summer. To "ripen" or mature the stems, in late summer (August and September) give them plenty of light in a half sunny position. A little less water at this time is beneficial. The fully grown young stems will slowly become fat and have a bronzy flush when they are well ripened. Don't go to extremes. Bring them in before frost or they will freeze. During the winter keep them moist, but do not try to start them into growth. A long winter rest until March is beneficial. If allowed, they will start growth earlier. Such early growth will make weak stems for next year's flowers. They like cool treatment in winter, a room where temperatures at night fall to 45° or 50° suits them well. They will do nicely, of course, even at 60°. They are safe in California until temperatures drop to 27° or lower. Protection may be afforded by covering with newspapers or sacking. ■

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Leaves from a California Florist's Notebook

by Alice Mary Rainford

Editor's Foreword: The following excerpt is another from Miss Alice M. Rainford's projected book, rich in floricultural, horticultural and artistic knowledge and experience. The book will be called "Leaves from a California Florists' Notebook." Through its pages (much of which will be previewed in CALIFORNIA GARDEN throughout this 200th Anniversary year), will be found many fascinating sidelights of persons and events of days gone by. We are indebted to Miss Rainford, and to Mrs. Alice Clark who has been responsible for compiling Miss Rainford's writing on this subject, particularly treasured by the readers of this magazine.

RELATION OF FLOWERS AND CONTAINERS

AS CLOTHING either adds or detracts from its wearer, the same is true with flowers in relation to vases or containers. A carefully selected vase can enhance a bouquet of flowers and room decor just as easily as a clashing or overwhelming vase can distract and add chaos to the well-arranged elegant collection of flowers and accessories.

While gathering flowers do not overlook the short or single specimen for a bedroom vase. A dainty blossom on a dressing table or desk is a delightful note. With old-fashioned furniture, a tiny mixed nosegay will add to the appreciation of some heirloom pottery or a pressed glass treasure. A Cecil Bruner rosebud centered among forget-me-nots, violets, or heliotrope is attractive for such use. Be sure to remove the heliotrope foliage and dip the stems in boiling water. If clustered tightly on short stems they are less likely to wilt and will give a greater depth of color.

For the Victorian home, let there be old-fashioned vases. Pressed glass sugar bowls, spill holders, or spoon holders are good for smaller arrangements. For larger designs use silver, brass or glass containers of the period.

Modern homes offer interesting opportunities for one or two striking arrangements against wide wall spaces, unbroken by windows. In Southern California, exotic flowers are easily available and startlingly beautiful. These include streptolizias, anthuriums, cymbidium orchids and lady slippers.

Many of the heavy Swedish glass bowls

are particularly fine for such flowers. Glass bricks, which are used in construction are good and they have the weight desirable for large flowers. A glass worker can open up whichever side of the brick you prefer. For the modern home, plan to have at least a dozen well selected vases for simple fundamental lines in various sizes and shapes.

Informal rooms are attractive with mixed varieties of what are usually called "garden flowers." One popular garden flower is the gerbera which is known for rich shades. An indication that the flower is fully developed is given by the florets in the center. If they are open the flower is developed and this type of flower will keep well in shallow water if the ends of the stems are scalded beforehand.

In the all-redwood house, simple types of baskets are desirable if in natural colors or of brown bamboo. Pottery jars or unornamented Chinese vases lend themselves for annuals such as marigolds, summer mums and snapdragons, all attractive and easy to grow in the garden. Shirley or Iceland poppies, mixed with wild oats or other grasses are also nice combinations.

When using pottery be sure the color of the vase is not too strong nor its form too ornate for the bouquet. There are Italian majolicas that are colorful yet subdued enough to harmonize with flowers. The Cantigali pottery, with its rooster trademark on the bottom is especially recommended.

If the vase itself is to be dominant and needed for room decoration use few,

but choice, flowers, plenty of greenery and bring some of the foliage over the edge to prevent the cut-off look. Brass containers are admirable treated in this way. The gleam of brass through the foliage will often provide a welcome bit of brightness to a cold or dull room.

Primitive types of Mexican glass in nice blues and greens are satisfactory for informal arrangements. The green is a softer shade than most glass so it harmonizes well with foliage and flowers. Mexican baskets in natural cane finish are lovely for adobe houses where plain Spanish or Mexican furniture is used. When filled with vivid flowers, such as the Mexican favorite, red carnations, they are very gay. Flowers can hardly be too bright for an adobe home. However, choose carefully if there are serapes, Indian rugs or strings of pepper commonly used for decoration in the adobe.

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... a memoir by a founding member of San Diego Floral Association. He has been gone now for some years ... but his thoughts reach over those years to those of us who are still sharing thought and feeling about our gardens. This was written about 1909.

Thoughts in the Garden

by Alfred D. Robinson

At the close of day I walk in my garden, and it speaks to me in way impossible during the full glare of the sun, when the sweat of my toil tastes salt in my mouth. Now the shadows fall across path and bed, making a fancy patchwork. The last rays of setting sun single out a big white rose and crown it Queen. The moisture rising from the damp earth brings out every delicate odor and each plant and tree seems to stir to the very pith in its effort to fulfill its destiny — to grow. I sit me down on a bench and my garden holds converse with me. I am careless of the knowledge that my state approaches that of nature-faking, that so exercises the minds of many clever people today. What care I for the dictum of science that plants don't talk? When a branch brushes my face, when the night wind brings me the scene of that good red rose, when the leaves of my pet eucalyptus quiver on every limb, they are returning thanks for benefits received. They say, "Here's a kiss, for I love you! My sweetness I bring to you; I whisper in your ear the old story."

Do we get out of our gardens a tithe of the joy and the peace that is in them? Not in them unless we put it there, by our thought and our work, and our daily care. Hire a landscape artist and gardener to carry out his designs, what have you? A beautiful garden, no doubt, but what of you is in it? How can its people talk to you; they merely express dollars and cents in a particular currency.

From such a garden the cut blooms are good money.

I am supposing that the owner of such a garden has said to the artist and the

gardener: "Make me a garden and I will foot the bill." Both artist and gardener are good, but I want their employer to desire some one thing at least in his garden, and want it just so and so badly that he will have it, even if be an artistic blot on the whole scheme.

Judged by the standard of the garden expert, how small and ridiculous and inartistic are most of our gardens, but where is the man who has made and loves his garden who would trade it for the grounds of a palace? He does not exist. It is doubtful if these palace grounds have ever given anyone the real soul pleasure that some poor body has gotten out of a window box in an upstairs flat.

I have had people come to my garden and say: "Of course it's pretty, but what a lot of work." Work? Yes! That's the joy of it. Is it not written that "By the sweat of thy brow thou shalt eat bread"? Not the breakfast food kind only, but the bread of life, the salt of existence. I know what you are thinking — "Everybody can't take the time for a garden." True, but few are so unfortunate as not to be able to have a slip in a tin can, and the principle is the same, and the principle is everything. What a froth about a garden; why not deal with an essential of life? May be so, but man cannot live by bread alone. There is such a thing as the soul, a timid thing in these days, but it is an essential if man is aught but a brute. In olden times men

sought food for the soul in groves and gardens. Think you not, that all among his beautiful growing things God must be more approachable, easier understood by His creatures made in His image? Do you think He will meet you better in your closet than in your garden?

Why not have the church services, at least in summer, in the garden? The blue sky above, the teeming earth beneath, the growing things around.

I remember well the time when business claimed me every day from seven to six, and it was business that brought me in continual contact with physical ills of my fellows. Some days I came home heart sick and physically exhausted, and I went into my garden. There was a little greenhouse of home manufacture, and in it was quite a large collection of Rex begonias. I knew them all by name; every new leaf was a subject for satisfaction, not a fraction of growth but what was noted. With an acetylene bicycle lamp I made my rounds. Bertha McGregor had started a new leaf like a little soft, plush hand. Louise Closson needed to come from under the shade of a big leaf of *Lesoudii*, and so on. In half an hour my troubles were all healed, and I went to bed knowing that in spite of all, this is a good old Earth.

How my thoughts have wandered; it is almost dark, though I see the moon rising through the tops of the cypress and she says, "Ah! there's that visionary again."

Plant Pests Intercepted Here

San Diego County Agricultural Commissioner James M. Moon announced recently that a number of important plant pests have been intercepted in the past few months by plant quarantine officials. These interceptions were the result of the combined efforts of Federal, State, and County plant quarantine inspectors. The constant vigilance of these inspectors has been responsible for protecting the State's and the County's vast agricultural industry from new pests that can be brought in accidentally.

Two ships, one from India and one from Taiwan, were found infested with Khapra beetle. A number of years ago this insect was found in California and was eradicated at great expense. "Three properties in San Diego County were subjected to eradication treatment," Mr. Moon said, "and so far the pest has not been reintroduced to the County. The Khapra beetle is an extremely serious and costly pest of grains and other stored products. It is a native pest of the Orient and can be brought in in infested cargo unless ships are inspected thoroughly before they are unloaded.

"Several kinds of fruit infested with Mexican fruit fly have been intercepted at San Ysidro," Mr. Moon said. The maggots of this fly infest oranges and other citrus fruits. The Mexican fruit fly has been present in Tijuana every summer for the last fifteen years and is a constant threat to the citrus industry of San Diego County, as well as other areas of the State. Mexican officials and the U.S. Department of Agriculture cooperate in a program of suppressing the pest in Baja California by means of sterile fruit fly releases. On this side of the border the State of California and the County of San Diego maintain a trapping program in a vigilant effort to prevent the fly's invasion of our citrus orchards.

Woolly whitefly, a pest relatively new to San Diego County, was intercepted on

citrus leaves in an automobile coming from Baja California. A State-sponsored spray program to eradicate the pest is under way in San Diego County at the present time. Mr. Moon said that so far the woolly whitefly has been found in generally residential areas, but it could add tremendously to the cost of citrus production if it should spread to commercial groves.

A blackfly on citrus leaves was found in an automobile crossing the border at San Ysidro. This pest, like the woolly whitefly, feeds on citrus leaves and would increase the cost of citrus production if it should become established here. Unlike the woolly whitefly, Mr. Moon said the blackfly does not occur in the United States, so this interception was a reminder to inspectors of the constant vigilance they must maintain.

Ping bollworm larvae were intercepted in an auto from Mexico crossing the border at Calexico. The auto was on its way to San Diego County. Pink bollworm does exist in several parts of California, including San Diego County, and is currently under a State-sponsored eradication program. If this pest were to become entrenched in the cotton-producing areas, it could conceivably decrease yields by 50% or more. Cotton was California's fourth most important crop in 1967.

"Burrowing nematodes were found in a number of out-of-state plant shipments," Mr. Moon said. They were found in many shipments which were certified to be free from this pest by the state of origin! These microscopic worms can cause the death of plants they infest. In Florida it is known as "Spreading Decline of Citrus." According to Mr. Moon a few infestations have been discovered in California, including San Diego County, in plant nurseries. They have since been eradicated at great expense to the nurserymen. ■

Colorful Gardens

by Poway Valley Garden Club

In the world of gardening there is nothing more useful than ground covers. Once established, they require little care in the way of soil or irrigation. Slopes planted with ice plant and ivies were found to be fire repellent. The fibrous roots are close to the soil surface and serve as a shield from rain runoff. Ice plant comes in many brilliant flower shades and is fine for large areas.

If your area is small, the sedums are a better choice. Sedum is a large family, and varied as to color and growth. Our nursery here stocks a good selection in flats. Set the ground cover sedums about 10 to 12 inches apart, they spread rapidly. Gold Moss sedum did not freeze here, nor did the other low, mat-like growing varieties. Gold Moss grows in a neat, yellow-green mound; yellow clusters of flowers. Sedums of all kinds root easily and can be propagated from branches. Many sedums are gray-leaved, many have interesting flowers. Greens and grays are a nice contrast in flower beds. They are very attractive in and among rocks.

Prostrate Rosemary with its aromatic foliage, is another choice for ground cover, specially for larger areas. It is covered in the spring with lavender flowers, which attract the bees.

Pony packs of colorful verbenas from the nursery will give a beautiful show of color for a summer ground cover. By keeping the dead flowers cut off they will bloom all summer. Toward the end of the season, if you allow some of the flowers to go to seed, new plants will come up next spring.

Many annuals can be used for ground cover, such as the fragrant alyssum. Scatter alyssum seeds between your drifts of spring flowering bulbs for color after the bulbs finish blooming.

Ivy geraniums look well on slopes and a few plants will cover a large area throughout summer.

Festuca makes a neat clump of gray grass. It is well behaved and looks well as a ground cover. When the clumps become older, they should be sheared to the ground and then divided. These

ground covers are chosen for sun exposure and can succeed in rather dry conditions.

Warm spells of weather, especially between rains, will bring on the aphids. Check the backs of leaves and the new top growth. A strong spray of water will dislodge these pests and not harm tender growth. Declare war on ant hills, they carry aphids to plants. One effective way to get rid of ants is with chlordane. Apply at ant hills and wet down thoroughly. Chlordane remains in the soil for a long time. Note the directions on the container, as it is toxic, but effective.

If you would like a particular garden subject covered in our column send your suggestions to "Colorful Gardens," P.O. Box 69, Poway, Calif., 92064. We also welcome your comments and questions.

THE CHRYSANTHEMUM AS A BONSAI

Many chrysanthemum lovers have trained these versatile plants as trees and cascades, but did you know that these same varieties of mums can produce a blooming Bonsai specimen in less than a year?

You can start your plants from cuttings, using any of the cascade varieties that produce flowers one inch or less in diameter, or the tree type, as the Magic Mum series. Rooted cuttings also may be purchased at the nursery.

To start, you will need a four-inch diameter pan, bulb pan or clay pot saucer, with a drainage hole, drilled with a mason's drill, for keeping the roots in a shallow form, making it easier to trim and transplant.

The soil mix may be purchased soil, replacement type; or you can mix your own, using 1/3rd each of sharp sand, leaf mold and good top soil. Start with a well-rooted cutting and carefully wash the soil from the roots, so they may be spread radially. Fill the container a little more than half-full with the soil mix. Spread the roots over the soil and cover lightly with just enough soil to cover the roots. Water well and keep moist, but not wet. After one week, start fertilizing with a liquid fish fertilizer at the suggested reduced rate: if the dilution table calls for one tablespoon per gallon, use only one teaspoon per gallon, and use in place of regular watering once a week. Always wait a week to 10 days to fertilize after repotting. Plants should have at

least six hours morning sun, in a wind protected spot.

Within a few days after planting, observe your plant and decide what the ultimate form is to be; formal upright as a single tree, informal upright as a multiple trunk slanting or semi-cascade, with the main foliage below the branches. Possibly, you would like to place the exposed roots over a rock or piece of driftwood. Whatever you decide, make a simple sketch as a guideline, for training and pruning, and stick to it. Training can begin with small weights, clothes pins or by tying at close intervals to a pre-formed wire that can be secured in the soil. Such bending and forming should be done only when the plant is in the dry, almost wilted state, or breakage will occur. Remove all unwanted branches when they appear, and control the ultimate height and width by pinching out the tips of the main and secondary branches. An over all pinching should be done about every 10 days.

Six weeks after planting, remove the plant from the pan and trim 1/3rd of the bottom of the root system. Repot in a five inch pan, using the same soil mix. At each repotting the surface roots will be gradually exposed by raising the plant in the pan and brushing some of the surface soil away from the base of the trunk. Continue to train and pinch unwanted growth. If you feel hesitant, refer to your sketch. Repot again in five to six weeks, trimming 1/3rd of the rootball as before. The pan size now depends on the ultimate size of the Bonsai. Keep in mind the ultimate size of the plant in relation to the final display container. Use care not to over pot. If the final display container is but five inches in diameter, you may wish to continue with the five-inch pan. At this second repotting, around the middle of August, every growing tip is removed 1/4 inch and then the plant is permitted to grow unchecked until the next repotting in September, when it again is repotted and an over all pinch is given the plant, removing any unnecessary branches and leaves. No fertilizer is given after buds start to show color. Most cascade varieties come into bloom around October 25th to November 1st, and the final repotting into the display container should take place just prior to bloom. Little or no root pruning is necessary at this time. Remove any large out of scale leaves and thin buds until just a few remain on the end of each branch-
let. —The Poway Valley Garden Club

CHRYSANTHEMUMS

*Chrysanthemums have the beauty,
Of the autumn of the year;
They borrowed rich hues of October,
For November's wealth of cheer.*

*They are the joy of earth revealed,
In a glow of color bright.
Are earth's reward for harvest yield,
And are nature's own requite.*

*As evening colors march across the sky
In glorious parade;
Chrysanthemums are a sunset flower,
When harvest colors fade.*

AUGUSTA KERCH DE LHORBE.

Rose Suggestion

Mildew: Mildew on roses is worst in regions of no rain during growing season. High humidity coupled with poor air circulation encourages it. Try to choose mildew-resistant varieties if possible. Red roses are most susceptible, usually. Spraying once a week with wettable sulfur, karathane, phaltan or actidione from early spring helps to control it, also watering foliage early in the day kills spores and aids in the control. Some prefer dusting with sulfur, sulfur with ferbam, or phaltan. Rose rust first shows as small bright orange spots on the under surface of the leaves. Your winter clean-up spray helps control it. If it starts showing during the growing season, clean up fallen leaves at once, and spray or dust at regular 14-day intervals with ferbam, zineb, lime sulfur or dusting sulfur.

Thought

*We watch, but cannot see
The seed invisibly
Become the Oak or Pine
Or sweet, fall fruiting vine.
Things have a time to root,
To flower and to fruit.
We see the ascent gained
And see stature attained,
But cannot see things grow
The process is too slow.
Patiently, thought by thought,
New ways of life are wrought.*

—Espinas y Flores

WHEN TO PRUNE TREES

The time to prune depends on the kind of tree and the desired results.

Light pruning can be done anytime. The removal of unwanted growth while it is small is easier and will have less dwarfing effect than if done later. The removal of broken, dead, weak, or heavily shaded branches will have little or no dwarfing effect on the tree no matter when they are removed.

Rapid plant development can best be maintained if the required pruning is done before the period of rapid growth usually occurring in the spring. Most deciduous trees can be pruned during the dormant period between leaf fall and spring growth. Evergreen plants will be set back the least if pruned just before spring growth starts. A few broadleaved evergreen plants make their most rapid growth after the weather warms later in the season. Pruning of these plants can be delayed. Pruning just before the period of most rapid growth will keep the leaves productive for the longest time. Also pruning cuts will be quickly concealed by new growth.

To retard plant development prune when growth is about complete. The pruning should not be so severe nor so early as to encourage new shoot growth. For many plants, the time to prune for maximum dwarfing usually would be in late spring to middle summer.

Directing the growth of a young tree can be done effectively during the growing season. Branches in desired positions can be encouraged by pinching back or by removing competing shoots in less desirable positions.

Corrective pruning may be easiest during the growing season. Branches that are too low because of the weight of leaves and fruit can be partially or completely thinned. Dead and weak limbs are easily spotted for removal.

Time of pruning to maximize flowering depends on the flowering habits of the tree.

Plants flowering on current season's growth (e.g. crape myrtle, Japanese pagoda tree and jacaranda) should be pruned during the winter before growth begins. Moderate to severe pruning will favor larger blossom clusters.

Plants flowering in the spring from buds on 1-year wood, particularly the flowering fruit trees, should be pruned at or near the end of the bloom period. The blossoms can be enjoyed and then removed before they set fruit that may compete with new shoots. Vigorous growth will be encouraged on which to bear next year's bloom.

Bleeding of pruning wounds can be heavy on mature trees such as maples and elms. Bleeding of susceptible trees can be minimized if the cuts are small (less than 3") and made in the fall or early winter. Bleeding is much more likely if severe pruning is done just before growth begins in the spring. Bleeding usually is not harmful to the tree. However, if it is heavy and persistent, it may cause bark injury below the pruning cut.

Cold injury may be increased by pruning. Some plants (e.g. roses, subtropicals) may be stimulated into new growth by pruning in the fall or early winter. A pruned plant may begin growth during a warm period in the winter only to be injured when it turns cold again. These plants should be pruned close to the time growth begins in the spring.

At high elevations where temperatures below 0 F may occur, it is best to delay pruning until just before growth begins in the spring. Even though growth is not stimulated, pruning may reduce plant hardness somewhat.

*Agricultural Extension Service
—University of California*

from 15 minutes to three days—cold weather will prolong the waiting period. It will usually vary from the size of a quart jar to the size of a ten-pound sack of flour or larger, and contain 5,000 bees or more. Swarms which hang in the shape of a ball in the open are the easiest to capture.

Mr. Moon noted that some backyard beekeepers will pick up swarms of bees free of charge, and some charge a small fee to cover the expenses of picking them up. Such a swarm is worthless to a commercial beekeeper but to a backyard beekeeper the value varies with the time of year. By May and for the remainder of the year their value is nil.

Most law enforcement agencies have a list of beekeepers who will pick up swarms. However, if a swarm of bees has entered a structure, call a pest control company; a listing is given in the yellow pages of the telephone directory under "Pest Control."

Should you wish to keep a swarm of bees and live in an incorporated area, check with your local authorities to see if it would be permissible in your area. If so, shake the swarm into a cardboard box—they can remain there for a day or two. Then it would be well to obtain a bee book which gives instruction in beekeeping and describes a regulation hive. Such a hive is required by California State Apiary Regulations. Last, but not least, you should then register your hive with the County Department of Agriculture. ■

Fruit and Roses

Popular myth has it that the nectarine is a cross between a peach and a plum. Not so, say the experts. It is a separate and distinct fruit. All stone fruits, including nectarines, cherries, apricots, peaches and almonds are members of the rose family. In fact, within the rose family, almonds, nectarines, and peaches are very close kin.

—*Cornerstone, III, 1969*

About Bees

San Diego County residents have observed the honey bees indicating their enthusiasm for warmer weather, as evidenced by the many inquiries received in the office of James M. Moon, San Diego County Agricultural Commissioner.

Mr. Moon offers some advice. As a swarm of bees attaches itself unexpectedly to a tree, bush, house, or automobile, one

of the first warnings to remember is don't disturb it in any way, as this may result in more serious problems. The swarm is looking for a new home so it must gather on an available object to await the time when the scout bees find a suitable home.

Normally, a swarm will remain settled in the form of a ball for a period ranging

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Proteas for this display were furnished by Howard Asper.

Highlights of the Southern California EXPO ...



PHOTOS
BY
BETTY
MACKINTOSH

Bromeliads, foreground, and Allium, background, make a beautiful contrast of brilliant and pastel hues. Display by Harry Macres of Santa Ana.



Above: Our magazine is ably presented to fairgoers by Rosalie Garcia, left, (one of our fine authors), and Olga Moeblman.



Howard Voss of Westview Gardens gives a spectacular first impression of the fair near the entrance, with his tuberous begonias

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Calendar of Care

PLANTS AND THEIR ENVIRONMENT

by George James

Garden Care Feature Writer

PREVIOUS ARTICLES have dealt with soil as it relates to plant environment, and how poor soils can be improved. Little has been said about good soils, for these do not cause problems in the growth of plants. It has been suggested that poor soils, those that are so compact it is difficult for irrigation water to penetrate and which do not drain well, are the soils we are so concerned with, such soils are the ones that cause the gardener problems. These soils often extend for many feet in depth, and are so deep that digging through them to reach a layer of soil that will drain is not practical. When this condition exists the gardener has several choices as possible solutions to his problems.

Suitable Plant Selection

The first choice offered is to select plants which will be the most likely to tolerate the lack of drainage and the probable accumulation of alkali salts which will occur as a result of the water we use and the poor downward movement of water in the compact soil.

The rains which we have enjoyed this past winter have reduced the alkali level in most soils, so alkali may not be of importance for another year or two, and could be prolonged even further than that if we are fortunate enough to have winters of above average rainfall, but, the problem of possible alkali accumulation cannot be ignored if we are to have satisfactory plant growth over a period of years.

There are lists of plants which are best adapted for growth on soil that has poor drainage, and other problems related to drainage, in *Ornamental Plants for Subtropical Regions* by Roland Hoyt. This book is not available now in book stores, but there is some possibility of another edition being printed soon.* If

*As we go to press, we have word that Mr. Hoyt's book is again in print. Good News!

has proven such a valuable reference for gardeners in this area that it is on the shelves of most of the libraries in the County. *Plants for Subtropical Horticulture* contains many lists of plants for the purpose the plants are to be used for, or for the conditions under which the plants are to grow. There are lists of plants which have some ability to grow on alkali soils, heavy soils, and a list of plants for damp soil and wet soil. Each plant is fully described in the compendium along with some information on its environmental needs.

Where poor drainage is caused by layers of hard soil below the surface, hardpan or similar, plants from the list of plants with shallow roots could be the answer to the problem of selecting the best plant to grow under such conditions. In addition to *Plants for Subtropical Horticulture*, a great deal of useful information can be found in the New Edition of the *Sunset Western Garden Book*. This is modestly priced and is available in most garden stores as well as the usual sources of books. It is possible to choose from the lists mentioned plants which will have the greatest likelihood of satisfactory growth in poorly drained soils.

Raised Beds and Drainage

The problem of lack of drainage in the soil can be overcome by building raised beds or planters which will allow the excess water to escape unto the surface of the surrounding soil, providing satisfactory conditions for good growth in the soil with which the planter is filled. Such planters when constructed should have ample drainage provided for by drain holes in the sidewalls just above ground level. A layer of pea gravel, or similar sized particles, placed on the surface of the existing soil before the planter is filled, will prevent the drain holes in the

sides from becoming clogged with soil, and will aid in the prevention of alkali salts ascending from the original soil into the soil with which the planter is filled.

Annual and perennial plants, small shrubs, and similar small plants, will need a foot of soil to grow properly; while medium shrubs and roses will need from two to two-and-one-half feet; and large shrubs and trees from three to five feet, according to their anticipated size. When above ground planters are used, they can be filled with the soil mixture which best meets the needs of the plant or plants that are to be grown, so proper soil and drainage can be provided for the most temperamental plants.

The problem of drainage in compact soil can be reduced by planting in a small hole. It is more desirable to provide drainage in any planting hole by digging the hole deep enough so a layer of soil that drains is reached, or by digging a small hole in the bottom of the planting hole which will reach down to a draining layer of soil. Such a small hole should be filled with sand, stones, or some similar material which will not pack later on and reduce drainage.

Sometimes it is not possible to dig through the compact soil or the hardpan layer because they are so thick, and if such is the case, the use of a small size planting hole may be the most desirable way of meeting the problem. The advice to plant a "fifty cents plant in a five-dollar hole" is often heard, and under many conditions it is good advice.

The purpose of the five-dollar hole, a large one, is to provide an area of improved soil into which the new roots of the plant can establish themselves quickly, causing the plant to grow more rapidly for the first year or two while the roots are collecting the plant food from the extra rich soil, enabling the plant to

sooner fulfill the purpose for which it was planted. A large planting hole in the soil we are considering, one that is compact and which has poor drainage, would enable a plant to grow large quickly, but it could also serve as a sump and collect irrigation water faster than the water can drain away. The water first collected would be below the roots of the plant, so could only be removed by draining away, and as water continued to collect it would increase in depth in the hole until it surrounded the roots of the plants. When this occurs the water in the soil fills the soil pores and air cannot enter. As a result of this, death of roots could occur. If this situation were of a short duration, the level of the water falling below the level of the roots, the small and very important small feeding roots would be killed. These are the roots which gather all the plant foods and water for the plant and their loss deprives the plant of these essential materials. If the duration of the poorly drained condition were long enough the larger roots of the plant would also be killed, and as a result of this, the plant would die.

The death of feeder roots in many plants is indicated by death of the newest growth on the plant and some loss of leaves. Careful irrigation can to a point prevent this, but there is always the chance of water from other parts of the garden reaching the plant and creating such a condition, or water could seep in from a neighbors, or unexpected rains could occur and as a result the plant would be overwatered.

The large, well-prepared hole is filled with soil that is less compact than the surrounding soil, and as a result water will enter it quicker and in larger amounts than it will the compact, unimproved soil. A large hole in compact soil is a liability until the roots of the plant grow into the

compact soil at the sides of the hole. When this happens the growth of the plant becomes slower, but the danger of overwatering is much less, as the compact soil will usually allow water to escape by drainage about as quickly as it will permit water to enter. By the time the feeder roots are established in the compact soil at the sides, the older roots in the original hole have matured to the point where they are much less likely to damage from too much water. There are also many more roots in this area which are gathering plant foods and water for the plant than there were when the plant was first planted. Thus, more of the water is used by the plant, and the danger of damage from excess water in the original planting hole is greatly reduced.

Contrast the situation that exists when a much smaller planting hole is used. The hole we visualize as being small is one which is one to two inches deeper and one to two inches wider than the root ball of the plant that is to occupy the hole. In some cases the hole may be less in depth than the ball which is to be planted.

Citrus trees are sometimes planted with a portion of their roots above ground and then soil drawn up over the root ball. When planted like this the plant's roots develop in the surface soil where overwatering is the least likely to happen, where there is the best supply of air, and the sloping surface of the soil at the base of the plant causes excess water to drain away from the planting hole, and by doing so, reduces the danger of too much water getting into it. When this manner of planting is practiced, it is necessary to extend the sloping soil surface a greater distance from the trunk or stem of the plant from time to time, and irrigation water must be applied so enough of it does enter the planting hole and rooting area.

Plants which need only limited quantities of water and when planted in areas that will be more heavily watered than would be acceptable to these plants, may be planted in the above manner and the chance of their being overwatered is greatly reduced. This manner of planting is useful when trees or shrubs are to be planted in lawns which grow on compact soils. Often such plants are set at or below the level of the soil in the lawn and the turf acts as a basin and holds extra water around the plant and above the planting hole, while planting a little high and sloping soil away from the

*... large versus small planting holes
Depends on what kind of soil
you're working with*

plant, the extra water will flow out onto the lawn and away from the immediate rooting area of the plant.

The use of the small planting hole greatly reduces the improved soil area which permits maximum water penetration, the water which enters the planting hole is kept in the area of the active roots by the depth of the hole, and as a result the roots can remove the water from the hole by the normal root activity, there is a shorter period of time required for the roots to reach the compact, unimproved soil, which will be less likely to become too wet and cause damage to the feeding roots.

Plants in small and shallow holes will grow less quickly, for they do not have the advantage of the well-prepared soil to develop their first roots into, but the chances of overirrigation are greatly reduced. It is more desirable to plant in large holes which are filled with a well-prepared soil if drainage can be supplied, and if drainage cannot be supplied, then the use of the smaller hole is indicated. Where small planting holes have been used there is a possibility that the sides of the hole, which is of a nature that is not attractive to root development, may cause the roots to be retained in the hole, not growing into the adjoining soil, and the plant becoming stunted, much the same as a plant kept too long in a pot or tub. The possibility of this happening can be reduced by vertical mulching of the area around the hole, improving the conditions there so the development of roots is encouraged. Vertical mulching is the making of holes in the soil which is to be improved and filling these holes with coarse humus. The holes become wicks which allow better water and air penetration and the humus provides food for the desirable soil organisms all of which will aid in creating a soil that is attractive to roots. Holes for vertical mulching should be about one inch in diameter, two feet in depth, placed eighteen inches from the plant, and in a circle around the plant with the holes eighteen to twenty-four inches apart. The coarse humus with which they are filled can be planter mix, peat moss, bark or wood products, or humus from a compost pit.

Animal manures can add salt to the soil. As the accumulation of salt from irrigation water is always a possibility in such soils, the use of such material is not advised. If possible, the holes made for vertical mulching should be left uncovered so the flow of air is impeded as

little as possible. If covering is necessary, a sand or very sandy soil should be used.

Holes for vertical mulching are the most effective if made with a tool that will remove a core of soil rather than making a hole with a bar or other tool which makes the hole by further tightening the soil particles in the area and reducing penetration of air and water. Such tools are soil bits, which can be used with electric drills, and are often advertised in gardener's magazines.

Soil tubes, which can also be used to examine soil to determine wetness, are suitable, and generally available. A soil Auger or an Oakfield Auger are also suitable. Post hole augers or diggers will make holes that are so large there is a chance the holes will become sumps and hold too much water, creating a condition which will repel rather than induce root development into their area.

Vertical mulching will be helpful to trees or shrubs which are established in the compact soils we have been discussing. They will greatly improve the soil into which the new roots are expected to grow if they are installed as described above, except the holes are located at the outer edge of the top growth of the plant being treated instead of eighteen inches from the trunk. The vertical mulching operation can be repeated once a year, each row of holes being placed a little further out than the last row, and thus a condition is created in the soil that will encourage the development of more roots which will result in better growth of the plant treated. A suitable commercial fertilizer can be placed in the holes made for vertical mulching if the plant being treated is in need of fertilization. One caution to observe in making the holes for this purpose, is to be aware that the tool used can strike roots, and excessive root damage can be harmful to plants, so proceed with caution and stop drilling at the first sign of resistance caused by an important root. If this happens, move to another place. It is not likely there will be roots of an important size very far in advance of the area covered by the top of the plant when the plant is growing in a compact soil. If the plant being mulched does have roots in this zone, which would be indicated by finding the roots in the first few holes prepared, then the diameter of the circle should be increased until a zone which is free of important roots is found. ■

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PHOTO BY BETTY MACKINTOSH

- A fascinating geometric form, this aloe is a native of Basutoland, South Africa. It grows on steep slopes of mountains, around 700'-800' elevation. Exportation has been banned since 1939.

Aloe polyphylla

... photographed at Hummel's Exotic Gardens, Leucadia.

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IRISES

by
Bill Gunther

MANY GARDENERS who saw the iris section at the recent Southern California Exposition at Del Mar were surprised by the great diversity in types of iris on display.

Their surprise was justified. They knew that the local iris season is at peak during the last part of April. That is the time when San Diego's big iris show is held, in Balboa Park. They could expect that no irises would be left for the Southern California Exposition, which is two months later.

Surprisingly, however, just as large a variety of irises were on display at Del Mar as at Balboa Park. Included were bearded, Japanese, English, spuria, Siberian, Pacific Coast, and Louisiana varieties, plus the species *Iris pseudacorus*, *Iris ensata*, *Iris douglasiana*, *Iris virginica*, *Iris kaempferi*, and *Iris laevigata*.

The reason why so many irises are in bloom for so long a season in this area is the mild climate. As contrasted with the extreme seasonal variations elsewhere, the very small variation in temperature between seasons along the southern California coast leaves many iris plants uncertain of just which season it is. Those plants therefore blossom at irregular intervals throughout the year.

Coastal temperatures are stabilized by the Pacific Ocean to a degree that the blossom season in Del Mar is notably more prolonged than the blossom season in Escondido. And the blooming season at Escondido, in turn, is longer than that of any area of more extreme seasonal changes, such as in the midwest.

Many people who admired the diverse iris types at the Southern California Exposition asked where the different types could be obtained, and when and where irises should be planted in this locality.

The best time to order irises is now. If they are ordered now they can be planted as soon as they are received. Nearly all types of iris, if planted here before November and if properly cared for, will bloom next spring.

For local gardeners the best source

for tall bearded iris varieties is the Pilley's Garden, P.O. Box 7, Valley Center, California 92082. The best source for spuria iris is either Pilley's Garden, or Walker Ferguson, 1160 North Broadway, Escondido, California 92025. A free price list may be obtained from either of those addresses by postcard request.

For all other types of irises, the best selection can be obtained by mail order from Melrose Gardens, 309 Best Road South, Stockton, California 95206. The Melrose Gardens has published a new illustrated mail order iris catalogue which includes photos, detailed descriptions, price listings, and instructions for growing all different types of irises; you can get a copy by sending them twenty-five cents and your mailing address.

It is important to realize that for best garden performance each different type of iris requires special gardening conditions. Each type should be planted in a garden situation which provides conditions appropriate for it.

In this area, tall bearded irises do best in a location which receives full sunlight; they are satisfied with any garden soil which receives periodic fertilization and sufficient watering. Tree roots should be cut out from any area used for iris plantings.

Spuria irises in California grow very well under the same conditions which are specified for tall bearded irises.

However, Japanese irises will soon die in southern California if they are given the same treatment as bearded or spuria irises. Japanese irises will not thrive in an ordinary iris bed because they require much more continuous moisture than is available in the average garden, and they require acid soil conditions. (The local water supply and most local soils are alkali in reaction). To provide ideal local conditions for Japanese irises, southern California gardeners should construct shallow ponds and then plant Japanese irises in pots which are half submerged in the water. Under this system, acid-type fertilizer may be dissolved in the pond; thus simultaneously providing the plants with nutrients and with the acid condition which they require.

Louisiana irises, like Japanese irises, are water lovers. However, they do not exhibit such particular sensitivity to lime as do the Japanese. Accordingly, the main requirements for the Louisiana irises are plenty of water and plenty of sunshine.

Pacific Coast irises, as the name implies, are native to the west coast of the United States. Because they are indigenous to this area, many of them perform beautifully in southern California—provided that they get a good start. The biggest obstacle is that these irises are very difficult to transplant. Accordingly, the easiest way to establish Pacific Coast irises in your home garden is to obtain seeds of the species desired, and plant these seeds in the area where the plants are desired.

Siberian irises do not perform particularly well here because our climate does not have the cold winters which they want. However, they will bloom in southern California gardens if pampered—with much more humus material and with considerably more watering than is provided by normal local garden practice.

Among the iris species, the most easily grown and most desirable for this area is *Iris pseudacorus*. This iris has beautiful, tall, erect foliage which grows to a height of five feet; it is very effective both for landscaping use and for use in artistic arrangements. *Iris pseudacorus* desires sunshine plus swampy-wet soil. Given those conditions, it will grow and spread more vigorously than any other iris.

We wish you happy gardening in your iris patch! ■

AMERICAN IRIS SOCIETY YOUTH MEMBERSHIP

The American Iris Society has just announced a new Junior Division for iris enthusiasts under the age of 19. Membership is \$1.00 per year for those whose parents are members of AIS; for others, the dues will be \$2.00 per year.

All Junior members will receive a special booklet on growing iris and will have a section in the National Bulletin. Those with independent memberships will also receive a copy of the National Bulletin.

Classes and Awards in shows and the National Convention are being created for Youth members. San Diego Shows have a junior division with a perpetual trophy awarded each year.

For further information write to: Mr. Larry L. Harder, Youth Committee, AIS, in Ponca, Nebraska 68770 or contact Mr. Art Day, Regional Vice-President, Region 15, 279 "J" St., Chula Vista, Calif. 92010. ■

Editor's Note: Due to a space problem which developed in last month's issue a large section of Mr. Kirk's fine article was inadvertently omitted . . . and discovered too late to correct in that issue. We print bereewith Mr. Kirk's article in its entirety.

ROSES

Guest Editor—JAMES A. KIRK,
Director of the Pacific Southwest
District of the American Rose
Society.



*From the 1969 Spring Rose Show —
Queen of Show "Duet," a hybrid
tea grown by Mr. and Mrs. C. F. Truby.*

PHOTOS
BY
BETTY
MACKINTOSH

THE SPRING FLOWER SHOWS are now a thing of the past, and everyone wants to let things go if it is too hot in the sun. So, we study the garden from an easy chair, whether it be in the patio or from the deck of a boat.

I heard the other day: If a man sits all day on the bank of a river with a pole in his hand, people respect him as a "patient fisherman." If he sits on his front porch thinking things over, he is referred to as "that lazy fellow down the street," so if you must sit and meditate do it where it can mean something, the Rose Garden!

Roses to me are the easiest plant to take care of and the rewards are greater. They are just like children, they must be watched and controlled, and with a little bit of care they will produce flowers every six weeks all the year long.

At this time of year, watering is one of the biggest problems. Just because we have had fog and damp nights, and you

saw a little dew on the plants this morning, before you left for work, this does not mean that they have been watered. The feeder roots are on the surface, and it is true that moisture absorbed through the leaves, by the roots that hold the plant up and push the necessary liquid into the stems and feed the new basal-breaks are at least 14 to 16 inches below the surface. The dew on the leaves and the ground will be dried up by the sun before noon.

Being a lazy gardener, I cover my beds with two inches of mulch and water overhead by sprinklers. I have heard all the stories about getting water on the leaves and watering after five in the evening, and the many other reasons for causing mildew. Neither do I believe in Cinderella, it just *ain't* so! With the new sprays that are on the market, if used properly, we should have no problem. Maybe in the most difficult areas there will be a little, but by following a regular

program it will soon be controlled. Our folks told us we had to take a bath every Saturday night, (at least), but this antiquated idea was outmoded by instant hot water heaters and modernized bathrooms. Why not modernize your care of your roses by buying a spray for mildew control and showering (or spraying) your bushes every Saturday afternoon?

The weeds have dried up in the fields and thrips are due to have a ball on your luscious plants, but with the new systemic sprays available for insects, these can be taken care of without too much effort.

If you want to cut down on that big job of pruning in January, now is the time to do it. Clean out the bushes by removing all deadwood, blind eyes, and cross branches, but don't prune as drastically as you do in January. The sun is hot enough to sunburn the lower canes causing more die-back, so just thin the bushes lightly. Keep all the spent blooms cut off, as these will just go to seed and cut down on your next bloom. Always cut $\frac{1}{4}$ of an inch above a live eye at a good strong leaf. Forget the five, seven or three leaflet bit and form the bush the way you want it to grow, not the way it wants to grow, as they are here to please us.

You like to eat three meals a day. Just because it is summer doesn't mean you are going on a starvation diet. Maybe we should, but don't expect the rose bush to diet for you. This is when it eats the most. I know, you fed well in the spring. This was demonstrated at the shows with

Prince—Queen Elizabeth, grown by Mr. and Mrs. F. P. White.



“... talk to the experts”

such beautiful blooms. The spring rains didn't do it all, so keep up with a good feeding program at least once a month, and the roses will love you for it. The thorns won't be noticed when the bush comes back into bloom.

The fungicide, insecticide, and food won't do any good for you or the roses while they're sitting in the garage. You have to get them into the garden. But be sure before you use any of these things you water the plants well the day before. We don't want to burn them up from the inside!!!

The American Rose Society has gone to great lengths to find the best rose growers in your area and to appoint them to the position of Consulting Rosarian. These



Princess—Grenada grown by Edwin Gould



King of Show — San Antonio grandiflora grown by the Trubys.

growers are not only willing and available to talk to you at the shows and at the various club meetings, but are committed to welcome you to their gardens, and when asked, take a trip to yours to help work out any problems you might have. The person to call on is the Rosarian in your area. I will list those in San Diego County and hope you will feel free to call on them. They probably have had the same problems as you, but have had the answers available to correct them.

San Diego County Consulting Rosarians

Carl Truby
1035 Monserate
Chula Vista

J. Wells Hershey
12505 Royal Road, No. 52
El Cajon

Paul Marner
1936 Rohn Road
Escondido

James A. Kirk
15131 Espola Road
Poway

Mrs. Clarence W. Benson
3640 Crown Point Dr.
San Diego

John Farleigh
2217 Whitman Street
San Diego

Mrs. J. J. Kenneally
2260 Catalina Blvd.
San Diego

Harry B. Cutler
4671 Toni Lane
San Diego

E. A. O'Brien
4636 Niagara Ave.
San Diego

Harvey E. Dixon
2213 Primrose Ave.
Vista

Dr. Donald A. Wilson
8355 La Jolla Shores Dr.
La Jolla

SAN DIEGO FLORAL ASSOCIATION

FLORAL BUILDING, BALBOA PARK

232-5762

(Under the sponsorship of
The Park and Recreation Dept., City of San Diego)
Third Tuesday, Floral Building, 8 p.m.
Pres.: Mrs. Donald A. Harris 298-1690
1827 Puterbaugh St., San Diego 92103
FLOWER ARRANGERS' GUILD OF SAN DIEGO
First Thursday, Floral Building, 7:30 p.m.
Pres.: Mrs. James Taylor 465-4715
4433 Summit Drive, La Mesa 92041

COORDINATING GROUPS

SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.
Second Thursday, Floral Building
P.O. Box 12162, S. D., Calif. 92112
Pres.: Mrs. Wm. W. Belts, Jr. 223-7259
406 E. Mac Place, San Diego 92103

PARTICIPATING GROUPS

IKEBANA INTERNATIONAL CHAPTER NO. 119
Fourth Wednesday, Floral Bldg. 10:00 a.m.
Pres.: Mrs. D. J. Arnold 278-5070
5377 Mt. Burnham Dr. San Diego 92111
Rep.: Mrs. Roy Jones 222-9373
3711 Del Mar Ave., San Diego 92106

AFFILIATE MEMBERS 1969

CITIZENS' COORDINATE
4189 Adams Ave.
San Diego 92116 284-5231
Exec. Dir. Mrs. Dorothea Edmiston
5353 Wilshire Dr.
San Diego 92116 284-8210

CONVAY GARDEN CLUB
First Wednesday, Floral Building, 7:30 p.m.
Pres.: Mr. Daniel Blum 582-2983
4730 Baylor Drive San Diego 92115

COUNTY CIVIC GARDEN CLUB
Meets every Thursday, 12m to 1 p.m.
Garden House, Grape and 101 Civic Center
Pres.: Mr. Arnold F. Landweaver 295-4704
3554 Georgia St., San Diego 92103
Pres.: Mrs. A. C. Van Zeyl 463-6165
12254 Wintergardens Dr., Lakeside 92040

LAS JARDINERAS
Third Monday, 10 a.m. Homes of members
Mrs. H. Mark Young 454-5886
2643 Hidden Valley Rd., La Jolla, Calif. 92037

MEN'S GARDEN CLUB OF SAN DIEGO CO.
Fourth Thursday, Floral Bldg., 7:30
Pres.: Mr. Ralph Kircimer 221-1072
1178 14th St., Imperial Beach 92032
Rep.: Dr. J. W. Troxell 282-9131
4950 Canterbury Drive, S.D. 92116

ORGANIC GARDENING CLUB
Third Friday, Floral Building, 7:30 p.m.
Pres.: Capt. C. R. Curr 284-2042
3515 37th St., S.D. 92105
Rep.: Mrs. Mary Pank 222-5031
4680 Del Monte Ave., S.D. 92107

POINT LOMA GARDEN CLUB
First Friday, Floral Bldg., 10 a.m.
Pres.: Mrs. Dwight Warner 222-9193
746 Cordova Street, San Diego 92107
Rep.: Mrs. M. M. Nordren 222-7394
440 San Antonio St., S.D. 92106

SAN DIEGO BONSAI SOCIETY, INC.
Second Sunday, Floral Bldg., 1-5 p.m.
Pres.: Mr. James Hopper 420-8766
731 Beach Ave.
Chula Vista, Calif. 92010
Rep.: Mrs. Ray Hosier 459-6706
743 Naudius St., L.J. 92037

SAN DIEGO CACTUS & SUCULENT SOCIETY
First Saturday, Floral Building, 2 p.m.
Pres.: Walter E. Greenwood 281-6781
4085 49th Street San Diego 92105
Rep.: Mrs. Peter Klinefelter 276-6517
2201 Fairfield Street
San Diego, Calif. 92110

SAN DIEGO CAMELLIA SOCIETY
Second Friday, Floral Building, 7:30 p.m.
Pres.: Mr. Charles Persing 278-1589
9552 Larrabee, San Diego 92123
Rep.: Mrs. Denna Montgomery 297-2625
4949 Florida St., S.D. 92116

S.D. CHAPTER CALIF. ASS'N NURSERYMEN
Second and Fourth Thursday, 7:30 p.m.
Pres.: Mr. Clem Runner 4680 Maple Street
La Mesa, Calif. 92041 463-6957

SAN DIEGO COUNTY DAHLIA SOCIETY
Fourth Thursday, Floral Building, 7:30 p.m.
Pres.: Victor Kerley 224-1884
3745 James Street, San Diego 92106
Rep.: Mrs. R. M. Middleton 296-3246
3944 Centre St., S.D. 92103

SD-IMPERIAL COUNTIES IRIS SOCIETY
Meets 3rd Sunday, Floral Bldg., 2:30 p.m.
Pres.: Mrs. Edward Owen 753-7618
1748 Nona Lane, Leucadia 92024
Rep.: Mrs. O. M. C. Connors 223-7769
1758 Cordova Ave., S.D. 92107

SAN DIEGO COUNTY ORCHID SOCIETY
First Tuesday, Floral Building, 8 p.m.
Pres.: Cmdr. John F. Miller 222-2102
4514 Niagara Ave., San Diego 92107
Rep.: Mrs. Floyd Hyde 463-5203
4349 Toni Lane, San Diego 92115

SAN DIEGO FUCHSIA SOCIETY
Second Monday, Floral Building, 8 p.m.
Pres.: Wm. Knott 277-1188
1912 David Street San Diego 92111
Rep.: Mrs. Mildred Murray 273-7758
467 East Fulvia St.
Encinitas, Calif. 92024

SAN DIEGO ROSE SOCIETY
Third Monday, Floral Building, 8 p.m.
Pres.: Richard D. Streepner 444-3421
1333 Venatche Ave.
El Cajon, Calif. 92021
Rep.: Mrs. Felix White 264-4030
5202 Imperial Ave. S.D. 92114

SOUTHWESTERN GROUP, JUDGES' COUNCIL CALIFORNIA GARDEN CLUBS, INC.
First Wednesday, Floral Building, 10:30 a.m.
Pres.: Mrs. R. E. Rosenbush 295-1537
3671 Pringle St., S.D. 92110
Rep.: Mrs. Roland S. Hoyt 296-2757
2271 Ft. Stockton Dr., S.D. 92103

OTHER GARDEN CLUBS

ALFRED D. ROBINSON BEGONIA SOCIETY
Third Friday, Homes of Members, 10 a.m.
Pres.: Miss Myrle Patterson 224-1572
410 Piedmont Dr., S.D. 92107

BERNARDO BEAUTIFUL & GARDEN CLUB
First Wednesday, 1:00 Seven Oaks Community Center, Bernardo Oaks Dr., Rancho Bernardo
Pres.: William Wheatley 487-1150
16402 Saratoga Dr. San Diego 92128 (Rancho Bernardo)

CARLSBAD GARDEN CLUB
First Friday, VFW Hall, Carlsbad, 1:30 p.m.
Pres.: Robert Williamson 729-2276
1255 Cynthia Lane, Carlsbad 92008

CHULA VISTA GARDEN CLUB
Third Wednesday, Chula Vista Woman's Club, 357 "C" St., 1:00 p.m.
Pres.: Mrs. Wm. Hedenkamp 422-2978
515 Second Ave., Chula Vista 92010

CITY BEAUTIFUL OF SAN DIEGO
Pres.: Mrs. Raymond E. Smith 488-0830
4995 Fanel St., Pacific Beach 92109

CORONADO FLORAL ASSOCIATION
Meets 1st Tuesday, Red Cross Bldg., 1113 Adella Lane
Pres.: Thomas J. Gligoreau 435-1007
309 1st Coronado 92118

CROSS-TOWN GARDEN CLUB
Third Tuesday, Knights of Columbus Hall, 3827 43rd St., S.D. 92105, 8 p.m.
Pres.: Mr. Charles W. Williams 284-2317
3885 41st Street, San Diego 92105

CROWN GARDEN CLUB OF CORONADO
Fourth Thursday, Red Cross Bldg., 1113 Adella Lane, 9:00 a.m.
Pres.: Mrs. William Marten 435-0726
761 Country Club Lane, Coronado 92118

DELCAIDA GARDEN CLUB
First Thursday, Encinitas Union Elementary School, 7:30 p.m.
Pres.: Mrs. I. F. Nichols 753-5409
159 Diana, Leucadia 92046

DOS VALLES GARDEN CLUB (PAUMA VLY.)
Meets 2nd Tuesday, Alt. Pauma Valley and Valley Center 1:30 p.m.
Pres.: Mrs. Frances J. Lawson 292-0202
P.O. Box 288, Valley Center 92082

EL CAJON WOMAN'S CLUB (Garden Section)
Pres.: Mrs. John Ohlson 444-2753
655 Bradford Rd., El Cajon 92020

ESCONDIDO GARDEN CLUB
Third Friday, Veterans Memorial Hall 1:00 p.m.
Pres.: Mrs. Olaf Olson 745-4449
Rt. 1 - Box 708 Escondido 92025

FALLBROOK GARDEN CLUB
Last Thursday, Fallbrook Woman's Clubhouse, 1:30 p.m.
V-Pres.: Mrs. Blanche Griset 728-2394
569 Knoll Park Lane Fallbrook 92028

GROSMONT GARDEN CLUB
Second Monday, La Mesa Chamber of Commerce Bldg., University Ave., La Mesa 92041
Pres.: Mrs. Glendon Omdorff 447-0680
784 Graves Ave., El Cajon 92020

HIPS AND THORNS
Meets at Members' Homes Quarterly.
Pres.: Mrs. Eugene Cooper 295-7938

IMPERIAL BEACH GARDEN CLUB
First Tuesday, Imperial Beach Civic Center, 1:30 p.m.
Pres.: Mrs. Walter V. Roberts 2932
553 Spruce St., Imperial Beach 92032

LA JOLLA GARDEN CLUB
Meets 1st Tuesday each month except July & August Mt. Soledad Presbyterian Church 1:00 p.m.
Pres.: Mrs. John Marx 459-6417
1216 La Jolla Rancho Rd., La Jolla 92037

LAKESIDE GARDEN CLUB
3rd Monday, Lakeside Farm School, 7:30 p.m.
Pres.: Mrs. Loy M. Smith 443-3089
1951 Farmington Dr., Lakeside 92040

LA MESA WOMAN'S CLUB (Garden Section)
3rd Thursday, La Mesa Women's Club, 8:00 p.m.
Pres.: Mrs. Allen W. Carpenter 583-7508
5169 Ewing, S.D.

LEMON GROVE WOMAN'S CLUB
(Garden Section)
First Tuesday, Lemon Grove Woman's Club House, 1 p.m.
Pres.: Mrs. Hal Crow 466-3330
3850 Quarry Rd., La Mesa

MISSION GARDEN CLUB
Meets First Tuesday, Asbury Methodist Church, 4102 Marlborough Ave., S.D. 92116, 8:00 p.m.
Mrs. V. E. Elmar 477-5344
1129 16th St., National City 92066

NORTH COUNTY ROSE SOCIETY
Meets First Tuesday, 7:30 p.m. at Palomar College
Pres.: James A. Kirk 748-3870
15131 Espola Road, Poway

NORTH COUNTY SHADE PLANT CLUB
Second Sat., 1:30 p.m., Seacoast Hall, Encinitas
Pres.: Howard M. Voss 753-5415
1290 Birmingham Dr., Encinitas 92024

O. C. IT GROW GARDEN CLUB
Second Wednesday, S. S. Occasions School Auditorium, 7:30 p.m.
Pres.: Mrs. John B. Stanton 726-1466
1885 Avocado Dr., Vista 92083

PACIFIC BEACH GARDEN CLUB
Meets second Monday, 7:30 p.m. Community Club House, Gresham and Diamond Sts., Pacific Beach
Pres.: Mrs. Edward J. Reemar 488-9609
970 Agate St., S.D. 92109

SAN DIEGO PALM SOCIETY
Pres.: Mr. James Specht

PALOMAR CACTUS & SUCULENT SOCIETY
Third Saturday, 1 p.m., Palomar College Foreign Language Building, Room F22
Pres.: Mrs. Mildred Gregory 724-4986
339 S. Melrose Dr., Vista 92083

PALOMAR ORCHID SOCIETY
Meets Third Wednesday, 7:30 p.m., Avocado Inn, 114 Hillside Terrace, Vista
Pres.: Eugene A. Casady 753-3571
932 Crest Drive, Encinitas

POWAY VALLEY GARDEN CLUB
2nd Wednesday, 9:30 a.m., Community Church
Pres.: Mrs. Leo C. Casick 748-8270
1338 Front St., Poway 92064

RANCHO SANTA FE GARDEN CLUB
Second Tuesday—Club House, 2:00 p.m.
Pres.: Hubert Larson 756-1926
P.O. Box 782 Rancho Santa Fe 92067

SAN CARLOS GARDEN CLUB
Fourth Tuesday, San Carlos Club, 6955 Golfcrest Drive
Pres.: Mrs. Douglas Oldfield 463-0692
6372 Lake Levon San Diego

SAN DIEGO BRANCH AMERICAN BEGONIA SOCIETY
Fourth Tuesday, Asbury Methodist Church, 8:00 p.m.
4102 Marlborough Ave., San Diego 92116
Pres.: Mrs. Mary Holmann 284-4449
2327 33rd Street, San Diego 92104

SAN DIEGO BROMELIAD SOCIETY
Second Monday, 8 p.m. at 4724 Nebo Dr., La Mesa
Pres.: Mrs. Jackie Hardin 424-3456
2626 Coronado Ave., Space 116
Imperial Beach, Calif. 92132

SAN DIEGO GARDEN CLUB
Third Wednesday, Seacoast Savings Building, Encinitas, 10 a.m.
Pres.: Mrs. Waldo Vogt 755-4772
773 Barbara Ave., Solana Beach 92075

SAN MARCOS GARDEN CLUB
Pres.: Mr. E. C. Petherer 744-0226
1221 San Julian Dr., San Marcos 92069

SAN MIGUEL BRANCH AMERICAN BEGONIA SOCIETY
First Wed., Youth Center, Lemon Grove
Pres.: Mrs. Mary Birchell 466-7631
7600 Sarita St., La Mesa 92041

SANTA MARIA VALLEY GARDEN CLUB
Second Monday, Ramona Women's Club House, 8th and Main, 9:30 a.m.
V-Pres.: Mrs. Winifred Posik 789-0531
723 E. St. Ramona 92065

SANTÉE WOMEN'S CLUB Garden Sec.
Pres.: Mrs. Leon Roloff 468-0291
9133 Willow Grove Ave., Santee 92071

GREEN VALLE GARDEN CLUB, POWAY
Meets 4th Thursday, 7:30 a.m. Homes of members
Pres.: Mrs. R. L. Smith 748-0475
13270 Stone Canyon, Poway 92064

VISTA GARDEN CLUB
First Friday, Vista Civic Center 1:00 p.m.
Pres.: Mrs. Wm L. Larsen 726-3622
300 Mar Vista Dr., Vista 92083

VISTA MESA GARDEN CLUB
Second Tuesday, 2 p.m., Family Association Center
Pres.: Mrs. Clara Haskins 465-0910
2352 El Prado, Lemon Grove 92045

